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Division of Birds

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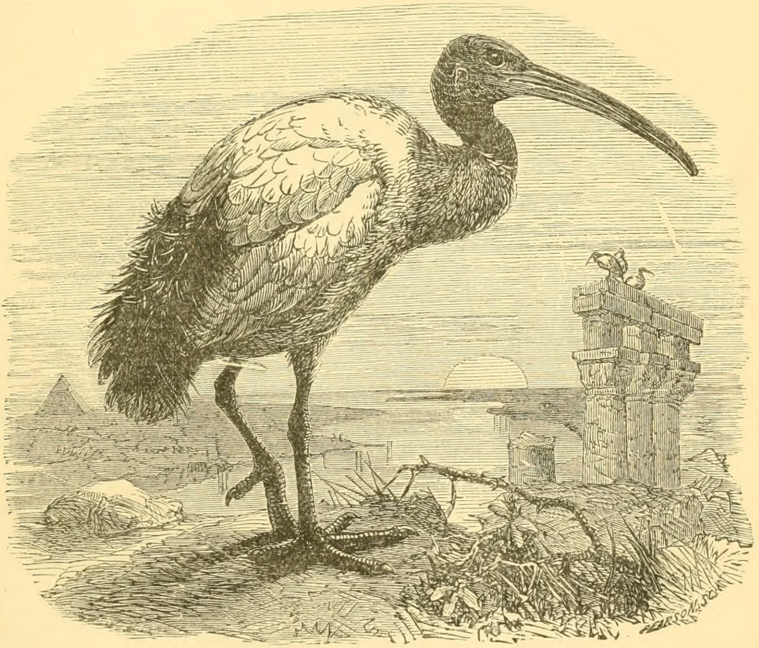
THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
PHILIP LUTLEY SCLATER, D.Sc., F.R.S.,
AND
A. H. EVANS, M.A., F.Z.S.

24



VOL. VI. 1906.
EIGHTH SERIES.

Quam magnificata sunt opera tua, Domine.

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PREFACE.

The conclusion of the sixth and last volume of the Eighth Series of 'The Ibis' gives the Editors an appropriate opportunity of saying a few words upon what may be considered the very successful career of the British Ornithologists' Union since its institution. The Union, founded in 1858, consisted at that date of twenty Members. At the present time, as will be seen by the List in this volume, besides four hundred and seventeen Ordinary Members it has the support of two Extra-Ordinary, nine Honorary, five Colonial, and twenty Foreign Members, making in all a total of 453 Members, all more or less interested in the advancement of Ornithological Science. Our Members, it will also be remarked, are spread over all the habitable parts of the globe, so that there is hardly any country from which we may not expect to obtain information on our special subject when required. This fortunate state of things has been of very great assistance to all the Editors of 'The Ibis' in their work.

As regards the size of 'The Ibis,' the pages in the first volume, issued in 1859, were 490, and the illustrative plates were 15. These numbers have been gradually increased until in the forty-eighth volume now completed the pages are 769 and the plates 22. It does not, of course, follow that an increase in the size of a journal invariably carries with it a better quality, but it is satisfactory to observe that the communications to our periodical have not fallen off in number, and that there is no lack of novelties for illustration. The bulk of our volume is, in fact, now such that any further increase would be attended by a certain amount of disadvantage.

As regards the contents of the present Series, we do not maintain that they surpass in value the writings of such famous Ornithologists as Blakiston, Blyth, Gurney, Hartlaub, Salvin, Seebohm, Swinhoe, Tristram, and Wallace, who all contributed papers to the First Series. But an impartial examination will, we think, render it evident that the Ornithologists of the present generation can supply us with papers of undoubted worth, while it must be remembered that at the present day, when the avifauna of the world is so much better known, it would be vain to expect articles of quite the same description as when "the world was young."

It is in the full hope of receiving the same continual and active support of our Members as has been hitherto accorded to us that we have agreed to undertake the responsible task of editing the new (Ninth) Series of this Journal, which will commence on the first of January next.

P. L. S.
A. H. E.

3 Hanover Square,
London, W.,
September 14th, 1906.

BRITISH ORNITHOLOGISTS' UNION.

1906.

[An asterisk indicates an Original Member. It is particularly requested that Members should give notice to the Secretary of the Union, 3 Hanover Square, London, W., of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of Election.

1896. Alexander, Boyd, F.Z.S. (1st Bn. Rifle Brigade); Wilsley, Cranbrook, Kent.

1901. Allchin, James H.; Museum and Public Library, Maidstone.

1888. Aplin, Oliver Vernon; Bloxham, Banbury, Oxon.

1896. Archibald, Charles F.; 2 Darnley Road, West Park, Leeds.

5 1896. Arrigoni degli Oddi, Count Ettore, Professor of Zoology, University, Padua; and Ca' oddo, Monselice, Padua, Italy.

1901. Arundel, Major Walter B., F.Z.S.; High Ackworth, Pontefract.

1901. Ashby, Herbert; Oakwood Lodge, Chandler's Ford, near Southampton.

1897. Astley, The Rev. Hubert Delaval, F.Z.S.; Benham Park, Newbury, Berks.

1885. Backhouse, James, F.Z.S.; Daleside, Scarborough, Yorks.

10 1904. Bahr, Philip Heinrich, B.A.; Rockfield, Crompton's Lane, Wavertree, Liverpool; and London Hospital, E.

1901. Bailward, Lt.-Col. A. C. (R.F.A.); 1 Princes Mansions, Victoria Street, S.W.

1892. Baker, E. C. Stuart, F.Z.S.; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.; and Shillong, Assam, India.

1901. Baker, John C., M.B., B.A.; Ceely House, Aylesbury, Bucks.

1899. Balfour, Frederick Robert Stephen; 21 Cambridge Square, W.

15 1889. Balston, Richard James, F.Z.S.; Springfield, Maidstone.

1906. Bannerman, David A.; 11 Washington House, Basil Street, S.W.

1890. Barclay, Francis Hubert, F.Z.S.; The Warren, Cromer, Norfolk.

Date of
Election.

1872. **Barclay**, Colonel **Hanbury**, F.Z.S.; 34 Queen's Gate Gardens, S.W.

1885. **Barclay**, Col. **Hugh G.**, F.Z.S.; Colney Hall, Norwich.

20 1889. **Barrett-Hamilton**, Major **Gerald E. H.**, F.Z.S., 5th Royal Irish Rifles; Kilmanock House, Arthurstown, Waterford, Ireland.

1881. **Barrington**, **Richard Manliffe**, LL.D.; Fassaroe, Bray, Co. Wicklow.

1903. **Bartels**, **Max.**; Pasir Datar, Halte Tjisaat (Preanger), Java, Dutch India.

1906. **Bates**, **George L.**, C.M.Z.S.; Kribi, Kamerun, West Africa.

1902. **Becher**, **Harry**, C.E.; 4 Walpole Street, Chelsea, S.W.

25 1897. **Benson**, **John**; The Post Office, Vancouver, B.C.

1897. **Berry**, **William**, B.A., LL.B.; Tayfield, Newport, Fifeshire.

1880. **Bidwell**, **Edward**; 1 Trig Lane, Upper Thames Street, E.C.

1884. **Bingham**, Lt.-Col. **Charles T.**, F.Z.S.; 6 Gwendwr Road, West Kensington, W.

1892. **Bird**, The Rev. **Maurice C. H.**, M.A.; Brunstead Rectory, Stalham, S.O., Norfolk.

30 1891. **Blaauw**, **F. E.**, C.M.Z.S.; Gooilust, 'sGraveland, Hilversum, Noord-Holland.

1903. **Blathwayt**, The Rev. **Francis Linley**, M.A.; 5 Monks Leys Terrace, Lincoln.

1897. **Bonar**, The Rev. **Horatius Ninian**, F.Z.S.; Free Church Manse, Salton, Pencaitland, East Lothian, N.B.

1905. **Bone**, **Henry Peters**, F.Z.S.; 28 Adelaide Crescent, Brighton.

1894. **Bonhote**, **John Lewis**, M.A., F.L.S., F.Z.S.; Gadespring Lodge, Hemel Hempstead, Herts.

35 1906. **Boorman**, **Staines**; Heath Farm, Send, Woking, Surrey.

1898. **Booth**, **George Albert**; Stephenson Terrace, Preston; and Fern Hill, Grange-over-Sands, Lancs.

1904. **Booth**, **Harry B.**; 40 Spring Royd, Shipley, Yorks.

1895. **Bradford**, Dr. **J. Rose**, F.R.S., F.Z.S; 8 Manchester Square, W.

1902. **Bridgeman**, Lieut. The Hon. **Richard O. B.**, R.N.; Weston Park, Shifnal, Salop.

40 1902. **Bristowe**, **Bertram Arthur**; The Cottage, Stoke D'Abernon, Surrey.

1885. **Brockholes**, **William Fitzherbert**; Claughton-on-Brock, Garstang, Lancashire.

Date of Election.

1890. Brooke, Harry Brinsley; 33 Egerton Gardens, S.W.

1899. Brooke, John Arthur, J.P.; Fenay Hall, Huddersfield; and Fearn Lodge, Ardgay, Ross-shire.

1900. Bruce, William Speirs, F.R.S.E.; Scottish National Antarctic Expedition Office, Surgeon's Hall, Edinburgh.

45 1906. Bucknill, John Alexander Strachey, M.A.; Government Patent Office, Box 52, Pretoria, Transvaal; and c/o Sir Thomas Bucknill, Hylands House, Epsom, Surrey.

1895. Bulgaria, H.R.H. Ferdinand, Prince of; The Palace, Sofia, Bulgaria.

1899. Butler, Arthur Lennox, F.Z.S.; Supt. of Game Preservation, Sudan Government, Khartum, Sudan.

1884. Butler, Lieut.-Col. E. A.; Plumton House, Bury St. Edmunds, Suffolk.

1896. Butterfield, W. C. J. Ruskin; Curator of the Corporation Museum, Brassey Institute, Hastings.

50 1900. Buttress, Bernard A. E.; Craft Hill, Dry Drayton, Cambridge.

1905. Buxton, Anthony; Knighton, Buckhurst Hill, Essex.

1884. Buxton, Geoffrey Fowell, F.Z.S.; Dunston Hall, Norwich.

1895. Buxton, S. Gurney, F.Z.S.; Catton Hall, Norwich.

1896. Cade, Francis J.; Teighmore, Cheltenham.

55 1889. Cameron, Ewen Somerled, F.Z.S.; V. Ranch, Terry, Montana, U.S.A.

1896. Cameron, Capt. James S.; 2nd Bn. Royal Sussex Regt., Malta; and Low Wood, Bethersden, Ashford, Kent.

1888. Cameron, John Duncan; Low Wood, Bethersden, Ashford, Kent.

1892. Campbell, Charles William, C.M.G., C.M.Z.S., H B.M. Chinese Consular Service; British Legation, Peking, China.

1906. Campbell, The Hon. Ian Malcolm; Cawdor, N.B.

60 1890. Cave, Charles John Philip, F.Z.S.; Ditcham Park, Petersfield.

1894. Chance, A. Macomb, B.A.; Lawnside, Edgbaston, Birmingham.

1884. Chapman, Abel, F.Z.S.; Houxty, Wark-on-Tyne.

1882. Chase, Robert William; Pool Hall, Wishaw, near Birmingham.

1897. Cholmley, Alfred John, F.Z.S.; c/o Mr. R. H. Porter, 7 Princes Street, Cavendish Square, W.

Date of Election.

65 1904. Clarke, Capt. Goland van Holt, D.S.O., F.Z.S., 18th Hussars; Brook House, Hayward's Heath, Sussex.

1889. Clarke, Major Stephenson Robert, F.Z.S.; Borde Hill, Cuckfield, Sussex.

1880. Clarke, William Eagle, F.L.S.; Royal Scottish Museum, Edinburgh.

1904. Cochrane, Commr. Henry Lake, R.N.; H.M.S. 'Ariadne,' Portsmouth; and Burston House, Pittville, Cheltenham.

1898. Cocks, Alfred Heneage, F.Z.S.; Poynetts, Skirmett, near Henley-on-Thames.

70 1895. Coles, Richard Edward; Ashley, Arnewood, Lymington.

1904. Collier, Charles, F.Z.S.; Clieveden House, 21 Eaton Terrace, S.W.

1906. Colman, Russell James, D.L., J.P.; Norwich.

1888. Cordeaux, Major William Wilfrid, 21st Lancers, Hounslow.

1882. Cory, Prof. Charles B., F.Z.S.; 160 Boylston Street, Boston, Mass., U.S.A.

75 1896. Cowie, Lt.-Col. Alexander Hugh, R.E., F.Z.S.; Aldershot; and c/o H. Ward, Esq., Yeatton, Lymington, Hants.

1899. Cowie, The Rev. Archibald G. G.; c/o S. P. G. Mission, Cawnpore, India.

1896. Crawford, Francis C.; 19 Royal Terrace, Edinburgh.

1894. Crewe, Sir Vauncey Harpur, Bt.; Calke Abbey, Derby.

1895. Crossley, Sir Savile B., Bt., M.V.O., F.Z.S.; Somerleyton, Lowestoft; and 12 Carlton House Terrace, S.W.

80 1898. Crossman, Alan F., F.Z.S.; Cumminin Station, near Doodlakine, Western Australia.

1903. Crowley, John Cyril, M.A.; 16 Chatsworth Road, Croydon.

1898. Crowley, Reginald Alwyn; Highfield, Alton, Hants; and 22 High Street, Croydon.

1899. Curtis, Frederick, F.R.C.S.; Lyndens, Redhill, Surrey.

1877. Dalgleish, John J.; Brankston Grange, Bogside Station, Stirling, N.B.

85 1898. Dalrymple, Capt. John James, Viscount, M.P.; Lochinch, Castle Kennedy, Wigtonshire; and 2nd Bn. Scots Guards.

1896. Danford, Capt. Bertram W. Y., R.E.; Bermuda.

1897. Darnley, Ivo Francis Walton, Earl; Cobham Hall, Gravesend; and Clifton Lodge, Athboy, Co. Meath.

Date of Election.

1883. Davidson, James, F.Z.S. Karwar, Kanara, Bombay; and 32 Drumsheugh Gardens, Edinburgh.

1905. Davis, Kenneth James Acton; Julian Hill, Harrow; and King's College, Cambridge.

90 1902. Dent, Charles Henry; c/o Bolitho & Co. Ltd., Penzance, Cornwall.

1891. De Vis, Charles W.: Queensland Museum, Brisbane; and care of Mr. B. Quaritch, 15 Piccadilly, W.

1893. De Winton, W. E., F.Z.S.; Graftonbury, Hereford; and Orielton, Pembroke.

1896. Dobbie, James B., F.Z.S.; 9 Mansfield Place, Edinburgh.

1889. Dobie, William Henry, M.R.C.S.; 2 Hunter Street, Chester.

95 1895. Donovan, Major Charles, I.M.S.; Ardmore, Passage West. Co. Cork; and c/o Messrs. P. Macfadyen & Co., Winchester House, Old Broad Street, E.C.

1904. Dorrien-Smith, Thomas Algernon, J.P., D.L.; Tresco Abbey, Scilly Isles.

1904. Drake-Brockman, Dr. Ralph E., F.Z.S.; Cheriton, Wellington Road, Bournemouth.

1865. Dresser, Henry Eeles, F.L.S., F.Z.S.; 28 Queensborough Terrace, Hyde Park, W.

1896. Drewitt, Frederic Dawtrey, M.A., M.D., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W.

100 1890. Drummond-Hay, Major James A. G. (late Coldstream Guards); Seggieden, Perth, N.B.

1904. Duckworth, George Herbert; 22 Hyde Park Gate, S.W.

1878. Durnford, W. Arthur, J.P.; Elsecar, Barnsley.

1896. Duthie, Lt.-Col. W. H. M.; The Presbytery, North Berwick.

1905. Dutton, The Hon. and Rev. Canon Frederick George; Bibury, Fairford.

105 1903. Earle, Edward Vavasour; Franks Hall, Farningham, Kent.

1870. Elliot, Daniel Giraud, F.R.S.E., F.Z.S.; American Museum of Natural History, New York, U.S.A.

1895. Elliot, Edmund A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.

1906. Elliot, Hugh Samuel Roger, F.Z.S.; 14a Lancaster Street, Lancaster Gate, W.

1884. Elliott, Algernon, C.I.E.; 16 Belsize Grove, Hampstead, N.W.

Date of Election.

110 1902. Ellison, The Rev. Allan, M.A.; Ardoyne House, Watton, Hertford.

1904. Elton, Henry Brown, B.A.; London Hospital, E.

1866. Elwes, Henry John, F.R.S., F.Z.S.; Colesborne, Cheltenham.

1879. Evans, Arthur Humble, M.A., F.Z.S.; 9 Harvey Road, Cambridge. (*Joint Editor.*)

1888. Evans, William, F.R.S.E.; 38 Morningside Park, Edinburgh.

115 1905. Ewen, Guy L'Estrange (King's Messenger); St. James's Club, Piccadilly, W.

1892. Fairbridge, William George; 141 Long Market Street, Capetown, South Africa.

1895. Falconer, John J. M.; Scottish Conservative Club, Edinburgh.

1894. Farquhar, Capt. Arthur M., R.N., C.V.O.; Granville Lodge, Aboyne, N.B.; and H.M.S. 'Magnificent,' Atlantic Fleet, Devonport.

1898. Farquhar, Commr. Stuart St. J., R.N.; H.M.S. 'Vestal,' China Station; and Drumnagesk, Aboyne, N.B.

120 1873. Feilden, Col. Henry Wemyss, C.B., C.M.Z.S.; Burwash, Sussex; and Junior United Service Club, S.W.

1897. Fenwick, Edward Nicholas Fenwick; Oxford and Cambridge Club, Pall Mall, S.W.

1886. Ferguson, Harold Stuart, F.Z.S.; c/o Gen. Sir J. Glyn, K.C.B., Sherborne House, Sherborne, Dorsetshire.

1901. Finlinson, Horace W., F.Z.S.; Gore Court, Sittingbourne, Kent.

1892. Finn, Frank, B.A., F.Z.S.; 29 Chalcot Crescent, Primrose Hill, N.W.

125 1902. Flower, Capt. Stanley Smyth, F.Z.S.; Kedah House, Zoological Gardens, Gizeh, Cairo.

1884. Forbes, Henry Ogg, LL.D., F.Z.S.; Free Public Museums, Liverpool.

1898. Foster, George E.; Brooklands, Cambridge.

1903. Foster, Nevin Harkness; Hillsborough, Co. Down, Ireland.

1880. Foster, William; Newlands, Petworth, Sussex.

130 1887. Fowler, William Warde, M.A.; Lincoln College, Oxford.

1865. Fox, The Rev. Henry Elliott, M.A.; The Croft, Lytton Grove, Putney Hill, S.W.

1881. Freke, Percy Evans; Southpoint, Limes Road, Folkestone.

1895. Frohawk, Frederick William; Ashmount, Rayleigh, Essex.

Date of Election.

1881. **Gadow, Hans**, Ph.D., F.R.S., F.Z.S.; University Museum of Zoology, Cambridge.

135 1886. **Gainsborough, Charles William Francis**, Earl of; Exton Park, Oakham.

1900. **Garnett, Charles**; 9 Cleveland Gardens, Hyde Park, W.; and New University Club, St. James's Street, S.W.

1900. **Gayner, Francis**; Beech Holm, Sunderland.

1892. **Gerrard, John**, Government Inspector of Mines; Worsley, near Manchester.

1902. **Gibbins, William Bevington**, F.Z.S.; Ettington, Stratford-on-Avon.

140 1879. **Gibson, Ernest**, F.Z.S.; c/o Messrs. Fraser, Stodart & Ballingall, 16 Castle Street, Edinburgh.

1902. **Gillett, Frederick**, F.Z.S.; 28 Beaufort Gardens, S.W.; and Junior Carlton Club, Pall Mall, S.W.

1902. **Gillman, Arthur Riley**; 5 Fellows Road, Hampstead, N.W.; and 3 Southampton Street, High Holborn, W.C.

1904. **Gilroy, Norman**; 95 Claremont Road, Forest Gate, E.; and Seaford, Sussex.

1903. **Gladstone, Hugh Steuart**, M.A., F.Z.S.; Capenoch, Thornhill, Dumfriesshire.

145* 1858. **Godman, Frederick DuCane**, D.C.L., F.R.S., F.Z.S.; 10 Chandos Street, Cavendish Square, W. (*President.*)

* 1858. **Godman, Percy Sanden**, B.A., C.M.Z.S.; Muntham, Horsham.

1906. **Goodall, Jeremiah Matthews**; 52 Oxford Gardens, North Kensington, W.

1901. **Goodchild, Herbert**; 66 Gloucester Road, Regent's Park, N.W.

1900. **Goodfellow, Walter**; 38 Churchill Road, Boscombe, Hants.

150 1905. **Goodyer, Leonard Ernest**; 37 Haworth Road, Gorton, Manchester.

1906. **Gordon, Seton Paul**, F.Z.S.; Auchintoul, Aboyne, N.B.

1899. **Gould, Frank Herbert Carruthers**, F.Z.S.; Matham Manor House, East Molesey, Surrey.

1895. **Grabham, Oxley**, M.A.; The Museum, York.

1906. **Griffith, Arthur Foster**; 59 Montpellier Road, Brighton.

155 1885. **Guillemard, F. H. H.**, M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

Date of Election.

1876. Günther, Albert C. L. G., M.A., M.D., F.R.S., F.Z.S.; 2 Lichfield Road, Kew Gardens, S.W.

1870. Gurney, John Henry, F.Z.S.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W.

1896. Gurney, Robert; Ingham Old Hall, Stalham, Norfolk.

1890. Gwatkin, Joshua Reynolds Gascoign; The Manor House, Potterne, Devizes.

160 1901. Haagner, Alwin; Dynamite Factory, Modderfontein, Transvaal, South Africa.

1891. Haigh, George Henry Caton; Grainsby Hall, Great Grimsby, Lincolnshire.

1887. Haines, John Pleydell Wilton; 17 King Street, Gloucester.

1898. Hale, The Rev. James Rashleigh, M.A.; The Vicarage, Horton Kirby, Dartford, Kent.

1905. Hamerton, Capt. Albert Edward, R.A.M.C., D.S.O.; St. Alban's Vicarage, York Road, Leeds.

165 1904. Harington, Capt. Herbert Hastings; 92nd Punjabis, Bhamo, Upper Burma; and c/o Messrs. Thos. Cook & Sons, Ludgate Circus, E.C.

1900. Harper, Edmund William, F.Z.S.; 45 Water Street, Georgetown, Demerara, British Guiana.

1900. Harris, Henry Edward; 2 St. Aubyn's Mansions, Hove, Brighton.

1893. Hartert, Ernst J. O., Ph.D.; The Zoological Museum, Tring, Herts.

1868. Harting, James Edmund, F.L.S., F.Z.S.; Edgewood, Weybridge, Surrey.

170 1896. Hartland, John Cole; c/o Messrs. Hunt & Co., P.O. Box 11, Yokohama, Japan.

1893. Hartmann, William; Milburn, Esher, Surrey.

1899. Harvey, Capt. Robert Napier, R.E.; Stanhope Lines, Aldershot.

1873. Harvie-Brown, John A., F.R.S.E., F.Z.S.; Dunipace House, Larbert, Stirlingshire, N.B.

1900. Hasluck, Percy Pedley Harford; The Wilderness, Southgate, N.

175 1902. Hatfeild, John Randall; Edlington Hall, Horncastle, Lincolnshire.

1898. Hawker, Richard M., F.Z.S.; Bath Club, Dover Street, W.; and c/o Messrs. Dalgety & Co., 96 Bishopsgate Street Within, E.C.

Date of Election.

1905. Hawkshaw, John Clarke, M.A., M.I.C.E., F.Z.S., F.G.S.; Hollycombe, Liphook, Hants; and 33 Great George Street, Westminster, S.W.

1905. Headley, Frederick Webb, F.Z.S.; Haileybury College, Herts.

1887. Hebbert, Charles T., F.Z.S.; The Rhodrons, Hook, Surbiton.

180 1905. Hellmayr, Carl E.; Zoological Museum, Tring, Herts.

1902. Hett, Geoffrey Seccombe; 16 Palace Gardens Mansions, The Mall, Kensington, W.

1899. Heywood, Richard; Narside, Narborough, Swaffham, Norfolk.

1900. Hills, John Waller; 14 Victoria Grove, Kensington, W.; and Highhead Castle, Carlisle.

1884. Holdsworth, Charles James, J.P.; Fernhill, Alderley Edge, Cheshire.

185 1877. Holdsworth, Edmund W. H., F.Z.S.; South Town, Dartmouth, Devon.

1905. Hopkinson, Emilius, M.B., D.S.O., F.Z.S.; 45 Sussex Square, Brighton; and Bathurst, Gambia, West Africa.

1904. Horsbrugh, Capt. Boyd Robert, F.Z.S., Army Service Corps, Naval Hill, Bloemfontein, O.R.C., South Africa.

1888. Horsfield, Herbert Knight; Crescent Hill, Filey, Yorks.

1893. Hose, Charles, D.Sc., F.Z.S.; Baram, Sarawak, Borneo.

190 1895. Howard, Henry Eliot, F.Z.S.; Clarelands, near Stourport.

1881. Howard, Robert James; Shearbank, Blackburn, Lancashire.

* 1858. Hudleston, Wilfrid Hudleston, M.A., F.R.S., F.Z.S.; 8 Stanhope Gardens, S.W.

1893. Hudson, William Henry, F.Z.S.; Tower House, St. Luke's Road, Westbourne Park, W.

1869. Hume, Allan Octavian, C.B., C.S.I., F.Z.S.; The Chalet, Kingswood Road, Upper Norwood, S.E.

195 1890. Hunter, Henry Charles Vicars, F.Z.S.; Mawley Hall, Cleobury Mortimer, Salop.

1901. Ingram, Collingwood; The Bungalow, Westgate-on-Sea.

1902. Innes Bey, Dr. Walter Francis; Curator of the Zoological Museum, School of Medicine, Cairo, Egypt.

1888. Jackson, Frederick J., C.B., C.M.G., F.Z.S., F.L.S.; Uganda, British East Africa; The Red House, Aldeburgh, Suffolk.

Date of Election.

1892. James, Henry Ashworth, F.Z.S.; Hurstmonceux Place, Hailsham, Sussex.

200 1896. Jesse, William, F.Z.S.; Meerut College, Meerut, India.

1889. Johnson, Frederick Ponsonby, B.A., J.P., D.L.; Castlesteads, Brampton, Cumberland.

1891. Johnston, Sir Harry Hamilton, G.C.M.G., K.C.B., F.Z.S.; St. John's Priory, Poling, near Arundel, Sussex.

1905. Johnstone, Edwin James, F.Z.S.; Junior Carlton Club, Pall Mall, S.W.

1900. Jones, Major Henry, F.Z.S. (late 62nd Regt.); East Wickham House, Welling, Kent.

205 1899. Jourdain, The Rev. Francis Charles Robert, M.A.; Clifton Vicarage, near Ashbourne, Derbyshire.

1902. Joy, Norman Humbert, M.R.C.S., L.R.C.P.; Bradfield, near Reading.

1880. Kelham, Col. Henry Robert, C.B. (late Highland Light Infantry); 52 Tisbury Road, Hove, Brighton.

1894. Kelsall, Major Harry Joseph, R.G.A.; Hongkong.

1897. Kelsall, The Rev. John Edward, M.A.; Milton Rectory, New Milton, Hants.

210 1904. Kelso, John Edward Harry, M.B.; San Remo, 12 Festing Road, Southsea, Hants.

1891. Kerr, J. Graham, F.Z.S., Regius Professor of Zoology, The University, Glasgow.

1895. Kingsford, William Edward; Cairo, Egypt.

1902. Kinnear, Norman Boyd; 12 Grosvenor Crescent, Edinburgh.

1882. Knubley, The Rev. Edw. Ponsonby, M.A.; Steeple Ashton Vicarage, Trowbridge.

215 1900. Koenig, Dr. Alexander Ferdinand; Coblenzer-Strasse 164, Bonn, Germany.

1906. Kollibay, Paul; Ring 12 I, Neisse, Germany.

1892. Laidlaw, Thomas Geddes; Bank of Scotland, Perth.

1884. Langton, Herbert; 11 Marlborough Place, Brighton.

1881. Lascelles, The Hon. Gerald, F.Z.S.; The King's House, Lyndhurst.

220 1892. La Touche, John David Digues, C.M.Z.S.; 58 Lansdowne Street, Hove, Brighton.

1898. Learoyd, A. Ernest; Rawthorpe Hall, Huddersfield.

1905. Legge, The Hon. Gerald; 10 Charles Street, Berkeley Square, W.

Date of Election.

1905. Leigh, Henry Boughton; Brownsover Hall, Rugby.

1906. Leigh, John Hamilton, F.Z.S.; Matcham's Park, Ringwood, Hants.

225 1898. Le Souëf, Dudley, C.M.Z.S.; Director of the Zoological Gardens, Melbourne, Victoria, Australia.

1868. Le Strange, Hamon, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk.

1903. Lethbridge, Ambrose Yarburgh; Dudmaston Hall, Bridgnorth, Salop; and Guards' Club, Pall Mall, S.W.

1889. Leyland, Christopher John, F.Z.S.; Haggerston Castle, Beal, Northumberland.

1897. Lilford, John, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.

230 1898. Loat, William Leonard S., F.Z.S.; Cumnor Place, near Oxford.

1897. Lodge, George Edward, F.Z.S.; 5 Thurloe Studios, Thurloe Square, S.W.

1905. Lovat, Simon Joseph, Lord, C.B., C.V.O., D.S.O., F.Z.S.; Beaufort Castle, Beauly, Inverness-shire.

1904. Lowe, Dr. Percy R.; c/o Sir Frederic Johnstone, Bt., The Hatch, Windsor.

1889. Loyd, Lt.-Col. Arthur Purvis, F.Z.S. (late 21st Hussars); Hurst Lodge, Sunningdale, Berks.

235 1902. Lucas, Auberon Thomas, Lord; 51 Grosvenor Square, W.

1877. Lumsden, James, F.Z.S.; Arden House, Arden, Dumbartonshire, N.B.

1904. Lynes, Lieut. Hubert, R.N.; H.M.S. 'Venus,' Mediterranean Fleet.

1900. McConnell, Frederick Vavasour; 37 Cranley Gardens, South Kensington, S.W.

1904. Macdonald, Kenneth Campbell; Burma Police, Rangoon, Burma.

240 1905. McGregor, Peter James Colquhoun; H.B.M. Consul, Sarajevo, Bosnia, Austria.

1897. McLean, John Chambers; Te Karaka, Gisborne, New Zealand.

1899. Macmillan, George Augustin; 27 Queen's Gate Gardens, S.W.

1906. Macmillan, William Edward Frank; 27 Queen's Gate Gardens, S.W.

1894. Macpherson, Arthur Holte, F.Z.S.; 54 Cleveland Square, Hyde Park, W.

Date of Election.

245 1906. Magrath, Major Henry Augustus Frederick; 51st Sikhs Frontier Force, Kohat, India; and c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W.

1904. Mapleton, Harvey William, B.A.; Bracknell Cottage, Hartley Wintney, Winchfield, Hants; and Badgworth, Axbridge, Somerset.

1894. Marshall, Archibald McLean, F.Z.S.; Bleaton Hallet, Blairgowrie, N.B.

1894. Marshall, James McLean, F.Z.S.; Bleaton Hallet, Blairgowrie, N.B.

1901. Martin, Rev. William Keble, M.A.; Imperial Avenue, Beeston, Notts.

250 1897. Mason, Col. Edward Snow; 20 Minster Yard, Lincoln.

1898. Massey, Herbert; Ivy Lea, Burnage, Didsbury, Manchester.

1896. Maxwell, Rt. Hon. Sir Herbert E., Bt., P.C., F.R.S.; 49 Lennox Gardens, S.W.

1883. Meade-Waldo, Edmund Gustavus Bloomfield, F.Z.S.; Stonewall Park, Edenbridge, Kent.

1899. Meinertzhagen, Capt. Richard, F.Z.S.; 3rd King's African Rifles, Nairobi, British East Africa; and Brookwood Park, Alresford, Hants.

255 1905. Middlemore, Thomas; Melsetter, Orkney.

1886. Millais, John Guille, F.Z.S.; Compton's Brow, Horsham.

1903. Mills, The Rev. Henry Holroyd, F.Z.S.; Treslothan Vicarage, Camborne, Cornwall.

1879. Mitchell, Frederick Shaw; Hornshaws, Millstream, Victoria, British Columbia.

1901. Mitchell, P. Chalmers, M.A., D.Sc., F.R.S., F.Z.S.; Secretary to the Zoological Society of London, 3 Hanover Square, W.

260 1897. Mitchell, William; 5 Bury Street, St. James's, S.W.

1904. Mitchell-Carruthers, Alexander Douglas; Holbrook Rectory, Ipswich.

1898. Monro, Horace Cecil, C.B.; Queen Anne's Mansions, Queen Anne's Gate, S.W.

1900. Montagu, Edwin S.; 12 Kensington Palace Gardens, W.

1906. Moore, Major Cyril H.; District Pay Office, Gibraltar.

265 1886. Muirhead, George; Speybank, Fochabers, Moray, N.B.

1893. Mullens, Major William H., M.A., F.Z.S.; 9 St. James's Place, S.W.

Date of
Election.

1892. Munn, Philip Winchester, F.Z.S.; Laverstoke, Whitchurch, Hants.

1897. Munt, Henry, F.Z.S.; 83 Kensington Gardens Square, W.

1900. Musters, John Patricius Chaworth, D.L., J.P.; Annesley Park, Nottingham.

270 1882. Nelson, Thomas Hudson; The Cliffe, Redcar, Yorkshire.

1895. Nesham, Robert, F.Z.S., F.E.S.; Utrecht House, Queen's Road, Clapham Park, S.W.

1897. Neumann, Oscar, C.M.Z.S.; Invaliden Strasse, Berlin, W.

1872. Newcome, Francis D'Arcy William Clough; Thurston Lodge, Bury St. Edmunds, Suffolk.

1904. Newman, Thomas Henry, F.Z.S.; Newlands, Harrowdene Road, Wembley, Middlesex.

275* 1858. Newton, Alfred, M.A., F.R.S., F.Z.S., Professor of Zoology in the University of Cambridge; Magdalene College, Cambridge.

1886. Nicholls, Howard Hill John, M.R.C.S.; Bramber Lodge, Downview Road, West Worthing.

1902. Nichols, John Bruce, F.Z.S.; Parliament Mansions, Victoria Street, S.W.

1900. Nichols, Walter Buchanan; Stour Lodge, Bradfield, Manningtree, Essex.

1876. Nicholson, Francis, F.Z.S.; The Knoll, Windermere.

280 1902. Nicoll, Michael John, F.Z.S.; Zoological Gardens, Gizeh, Cairo.

1904. Noakes, Wickham; Selsdon Park, Croydon.

1895. Noble, Heatley, F.Z.S.; Temple Combe, Henley-on-Thames.

1892. Ogilvie, Fergus Menteith, M.A., F.Z.S.; The Shrubbery, 72 Woodstock Road, Oxford.

1890. Ogilvie-Grant, W. R., F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

285 1889. Ogle, Bertram Savile; Hill House, Steeple Aston, Oxford.

1906. Osmaston, Bertram Beresford (Imperial Forest Service, India); c/o Messrs. Grindlay & Co., 54 Parliament Street, S.W.

1883. Parker, Henry, C.E.; Whitbourne Lodge, Manby Road, Great Malvern.

1879. Parkin, Thomas, M.A., F.Z.S.; Fairseat, High Wickham, Hastings.

1891. Patterson, Robert; Glenbank, Holywood, Co. Down.

Date of Election.

290 1904. Pearse, Theed; Mentmore, Ampthill Road, Bedford.

1894. Pearson, Charles Edward, F.L.S.; Hillcrest, Lowdham, Notts.

1891. Pearson, Henry J., F.Z.S.; Bramcote, Notts.

1902. Pease, Sir Alfred Edward, Bt., F.Z.S.; Pinchinthorpe House, Guisborough, Yorkshire; and Brooks's Club, St. James's Street, S.W.

1898. Penn, Eric Frank; Taverham Hall, Norwich.

295 1891. Penrose, Francis George, M.D., F.Z.S.; Wick House, Downton, Salisbury, Wilts.

1900. Percival, Arthur Blayney, F.Z.S.; Game-Ranger, Nairobi, British East Africa Protectorate; and Somerset Court, Brent Knoll, Somerset.

1886. Phillips, E. Lort, F.Z.S.; 79 Cadogan Square, S.W.

1888. Phillips, George Thorne; Wokingham, Berkshire.

1893. Pigott, Sir Thomas Digby, K.C.B.; 5 Ovington Gardens, S.W.

300 1893. Pike, Thomas Mayer, M.A.; c/o Mr. R. H. Porter, 7 Prince's Street, Cavendish Square, W.

1905. Pollard, Capt. Arthur Erskine St. Vincent (The Border Regiment); Royal Military College, Camberley, Surrey; and Naval and Military Club, Piccadilly, W.

1896. Popham, Hugh Leyborne, M.A.; 14 Arlington Street, St. James's, S.W.

1898. Price, Athelstan E.; Broxbourne, Herts.

1903. Proctor, Major Frederick William (late West Riding Regt.); Downfield, Maidenhead.

305 1901. Proud, John T.; Dellwood, Bishop Auckland.

1893. Pycraft, William Plane, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1888. Radclyffe, Charles Robert Eustace; Hyde, Wareham, Dorset.

1903. Ralfe, Pilcher George; The Parade, Castletown, Isle of Man.

1903. Ratcliff, Frederick Rowlinson; 24 Lancaster Gate, W.

310 1906. Rattray, Lt.-Col. Rullion Hare; 22nd Punjab Infantry, Dera Ghazi Khan, Punjab, India.

1879. Rawson, Herbert Evelyn; Comyn Hill, Ilfracombe.

1894. Read, Richard Henry, L.R.C.P., M.R.C.S.; Church Street, Hanley, Staffordshire.

1888. Read, Robert H.; 8*a* South Parade, Bedford Park, W.

1877. Reid, Capt. Savile G. (late R.E.), F.Z.S.; The Elms, Yalding, Maidstone.

Date of Election.

315 1903. Renaut, William E.; 15 Grafton Square, Clapham, S.W.

1895. Rickett, Charles Boughey, F.Z.S.; Upton House, Lostwithiel, Cornwall.

1896. Rippon, Lt.-Col. George, F.Z.S.; 89th Punjabis, Mandalay, Upper Burma.

1902. Riviere, Bernard Beryl; 82 Finchley Road, N.W.

1898. Robinson, Herbert C., C.M.Z.S.; Selangor State Museum, Kuala Lumpur, Federated Malay States.

320 1896. Rogers, Major J. Middleton, F.Z.S. (late 1st Dragoons); Riverhill, Sevenoaks, Kent.

1893. Rothschild, The Hon. L. Walter, M.P., D.Sc., F.Z.S.; The Zoological Museum, Tring, Herts.

1894. Rothschild, The Hon. N. Charles, F.Z.S.; Tring Park, Tring, Herts.

1883. St. Quintin, William Herbert, F.Z.S.; Scampston Hall, Rillington, Yorkshire.

1903. Sandeman, Capt. Robert Preston (late 10th Hussars); Dan-y Park, Crickhowell.

325 1899. Sapsworth, Arnold Duer, F.Z.S.; The Dower House, Ember Court, East Molesey, Surrey; and National Liberal Club, Whitehall Place, S.W.

1902. Sargeaunt, Arthur St. George; 83 Madeley Road, Ealing, W.

1904. Sargent, James; 76 Jermyn Street, S.W.; and 2 Napier Villas, Cambridge Road, Barnes.

1870. Saunders, Howard, F.L.S., F.Z.S.; 7 Radnor Place, Hyde Park, W. (*Secretary.*)

1902. Saunders, William Henry Radcliffe, C.E., F.Z.S.; 79 Warwick Road, S.W.

330 1898. Scherren, Henry, F.Z.S.; 9 Cavendish Road, Harringay, N.

1905. Schwann, Harold, F.Z.S.; 4 Prince's Gardens, S.W.

* 1858. Sclater, Philip Lutley, D.Sc., F.R.S., Odiham Priory, Winchfield, Hants; and Athenæum Club, Pall Mall, S.W. (*Joint Editor.*)

1891. Sclater, William Lutley, M.A., F.Z.S.; Box 1207, Colorado Springs, Colorado, U.S.A.

1899. Selous, Frederick Courteney, F.Z.S.; Heatherside, Worplesdon, Surrey.

335 1889. Senhouse, Humphrey Patricius, B.A.; The Fitz, Cockermouth, Cumberland.

Date of
Election.

1899. Serle, The Rev. William, M.A., B.D.; The Manse, Duddingston, Edinburgh.

1900. Service, Robert: Maxwelltown, Dumfries.

1901. Seth-Smith, David, F.Z.S.; 14 Canning Road, Addiscombe, Croydon.

1904. Seth-Smith, Leslie Moffat, B.A.; Alleyne, Caterham Valley, Surrey.

340 1899. Sharman, Frederic, F.Z.S.; 47 Goldington Road, Bedford.

1871. Sharpe, Richard Bowdler, LL.D., F.L.S., F.Z.S.; Assistant Keeper, Zoological Department, British Museum (Natural History), South Kensington, S.W.

1870. Shelley, Capt. G. Ernest, F.Z.S. (late Grenadier Guards); 39 Egerton Gardens, South Kensington, S.W.

1865. Shepherd, The Rev. Charles William, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.

1900. Simey, Athelstane Iliff; 17 Finsbury Circus, E.C.

345 1882. Slater, The Rev. Henry H., M.A., F.Z.S.; Oldbury Farm House, Ightham, Sevenoaks.

1902. Smith, Abel Henry, M.P.; Woodhall Park, Hertford.

1906. Snouckaert van Schauburg, Baron René Charles; Neerlangbrock, Holland.

1896. Sondes, George Edward, Earl, F.Z.S.; Lees Court, Faversham.

1881. Southwell, Thomas, F.Z.S.; 10 The Crescent, Chapel Field, Norwich.

350 1903. Sparrow, Major Richard; 7th Dragoon Guards, Canterbury; and Rookwoods, Sible Hedingham, Essex.

1906. Stanford, Surgeon Charles E. C., B.Sc., M.B., R.N.; Glenwood, Dalmuir, Dumbartonshire.

1893. Stanley, Samuel S.; Fair View House, Harbury, Leamington, Warwickshire.

1900. Stares, John William Chester; Portchester, Hants.

1902. Stenhouse, John Hutton, M.B., R.N.; c/o Messrs. Woodhead & Co., 44 Charing Cross, S.W.

355 1904. Stephen, Julian Thoby; 46 Gordon Square, W.C.

1906. Steward, Edward Simmons, F.R.C.S.; 10 Prince's Square, Harrogate, Yorks.

1898. Stirling, William, J.P., D.L.; Ord House, Muir of Ord, N.B.

Date of Election.

1893. Stonham, Charles, C.M.G., F.R.C.S., F.Z.S.; 4 Harley Street, Cavendish Square, W.

1881. Studdy, Col. Robert Wright (late Manchester Regiment); Waddeton Court, Brixham, Devon.

360 1887. Styan, Frederick William, F.Z.S.; Ben Craig, Bayham Road, Sevenoaks; and Shanghai, China.

1887. Swinburne, John; Haenertsburg, Transvaal, S. Africa.

1882. Swinhoe, Col. Charles, M.A., F.L.S., F.Z.S.; 31 Matheson Road, West Kensington, W.; and Savile Club, 107 Piccadilly, W.

1884. Tait, William Chaster, C.M.Z.S.; Entre Quintas 155, Oporto, Portugal.

1905. Taylor, Lionel E., F.Z.S.; Superintendent of Government Nurseries, Irene District, Pretoria, Transvaal.

365 1873. Tegetmeier, William Bernhard, F.Z.S.; 16 Alexandra Grove, North Finchley, N.

1889. Tennant, Edward Priaulx; 21 Lennox Gardens, S.W.; and The Glen, Innerleithen, N.B.

1886. Terry, Major Horace A. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton.

1904. Thompson, Lieut. William R., R.G.A.; Work Point Barracks, Victoria, B. Columbia.

1900. Thorburn, Archibald, F.Z.S.; High Leybourne, Hascombe, near Godalming, Surrey.

370 1893. Thorpe, Dixon L.; Loshville, Etterby Scaur, Carlisle.

1903. Ticehurst, Claud Buchanan; Winstowe, St. Leonards-on-Sea; and The College, Guy's Hospital, S.E.

1894. Ticehurst, Norman Frederic, M.A., M.B., F.R.C.S., F.Z.S.; 35 Pevensey Road, St. Leonards-on-Sea.

1902. Townsend, Reginald Gilliat, M.A.; Buckholt, Dean, Salisbury.

1893. Trevor-Battye, Aubyn B. R., F.Z.S.; Chilbolton, Stockbridge, R.S.O., Hants.

375 1906. Tuke, Charles Molesworth; The Gate House, Chiswick.

1864. Upcher, Henry Morris, F.Z.S.; Sheringham Hall, Norfolk.

1894. Ussher, Richard John; Cappagh House, Cappagh, S.O., Co. Waterford, Ireland.

1906. Vaughan, Lt.-Commdr. Robert E., R.N.; H.M.S. 'Moorhen,' Hong Kong.

Date of Election.

1890. Venour, Stephen; Fern Bank, Altrincham, Cheshire.

380 1884. Verey, Alfred Sainsbury; Heronsgate, near Rickmansworth.

1881. Verner, Col. William Willoughby Cole; Hartford Bridge, Winchfield, Hants; and United Service Club, S.W.

1902. Wade, Edward Walter; 174 Spring Bank, Hull.

1886. Wade-Dalton, Col. H. D.; Hauxwell Hall, Finghall, R.S.O., Yorkshire.

1895. Wallis, Henry Marriage; Ashton Lodge, Christchurch Road, Reading.

385 1881. Walsingham, Thomas, Lord, F.R.S., F.Z.S.; Merton Hall, Thetford, Norfolk.

1899. Walton, Capt. Herbert James, M.B., F.R.C.S., I.M.S., C.M.Z.S.; c/o Messrs. King, King & Co., Bombay.

1872. Wardlaw-Ramsay, Lt.-Col. R. G., F.Z.S.; Whitehill, Rosewell, Midlothian, N.B.

1896. Watkins, Watkin, F.Z.S.; Highfield, Harrow; and Wellington Club, S.W.

1903. Watt, Hugh Boyd; 3 Willow Mansions, Fortune Green Road, West Hampstead, N.W.

390 1906. West, Colin, F.Z.S.; The Grange, South Norwood Park, S.E.

1900. Westell, William Percival, F.R.H.S.; 5 Glenferrie Road, St. Albans, Herts.

1891. Whitaker, Benjamin Ingham; Hesley Hall, Tickhill, Rotherham.

1891. Whitaker, Joseph I. S., F.Z.S.; Malfitano, Palermo, Sicily.

1903. White, Stephen Joseph, F.Z.S.; Oakwood, Crayford, Kent.

395 1903. Whitehead, Charles Hugh Tempest; Deighton Grove, York; and 56th Infantry Frontier Force, Kohat, India.

1887. Whitehead, Jeffery, F.Z.S.; Mayes, East Grinstead, Sussex.

1904. Whitty, Charles Richard, B.A., M.D.; Minna Lodge, Hunstanton, Norfolk.

1897. Whymper, Charles, F.Z.S.; 7 James Street, Haymarket, S.W.

1906. Wiener, Augustus F., F.Z.S.; 6 Northwick Terrace, Maida Vale, N.W. (Died July 5, 1906.)

400 1898. Wigglesworth, Joseph, M.D., F.R.C.P.; Rainhill, near Liverpool.

Date of
Election.

1894. **Wilkinson, Johnson**; St. George's Square, Huddersfield, Yorkshire.

1904. **Williams, Major Charles Louis**, M.D., I.M.S.; Spring Vale House, Holywell, North Wales.

1896. **Williams, Capt. Lionel Arthur**, F.Z.S.; Isthmian Club, Piccadilly, W.

1897. **Wilson, Allan Read**, B.A., M.B., B.Ch.; Bloxham, Oxon.

405 1888. **Wilson, Charles Joseph**; 34 York Terrace, Regent's Park, N.W.

1900. **Wilson, Dr. Edward Adrian**, F.Z.S.; The Loan, Colinton, Midlothian, N.B.

1887. **Wilson, Scott Barchard**, F.Z.S.; Heatherbank, Weybridge Heath, Surrey.

1897. **Witherby, Harry Forbes**, F.Z.S.; 11 Hereford Mansions, Hereford Road, Bayswater, W.

1899. **Wollaston, Alexander Frederick Richmond**, B.A.; 19 Upper Gloucester Place, Dorset Square, N.W.

410 1902. **Workman, William Hughes**; Lismore, Windsor, Belfast.

1875. **Wright, Charles A.**, F.L.S., F.Z.S. (Knight of the Crown of Italy); Kayhough, Kew-Gardens Road, Kew, S.W.

1871. **Wright, E. Perceval**, M.D., F.L.S., C.M.Z.S., Professor of Botany in the University of Dublin.

1891. **Wright, Thomas**, M.D.; Castle Place, Nottingham.

1904. **Wright, William Crawford**; Charlevoix, Marlborough Park, Belfast.

415 1895. **Yerbury, Lt.-Col. John William** (late R.A.), F.Z.S.; 8 Duke Street, St. James's, S.W.; and Army and Navy Club, S.W.

1889. **Young, Capt. James B.**, R.N.; Tytherley, Wimborne, Dorset.

1897. **Young, John Joseph Baldwin**, M.A.; Richmond Park, near Sheffield.

Extra-Ordinary Members.

1899. **Godwin-Austen, Lt.-Col. Henry Haversham**, F.R.S., F.Z.S.; Nore, Hascombe, Godalming.

1860. **Wallace, Alfred Russel**, F.R.S., F.Z.S.; Broadstone, Wimborne, Dorset.

Honorary Members.

Date of Election.

1886. Ayres, Thomas; Potchefstroom, Transvaal, South Africa.
1890. Berlepsch, Graf Hans von, C.M.Z.S.; Schloss Berlepsch, Post Gertenbach, Witzenhausen, Germany.
1900. Collett, Prof. Robert, F.M.Z.S.; University Museum, Christiania.
1870. Finsch, Dr. Otto, C.M.Z.S.; Altewiekring 19^{e}, Brunswick, Germany.
5 1894. Giglioli, Dr. Henry Hillyer, F.M.Z.S.; Reale Istituto di Studi Superiori, Florence.
1898. Goeldi, Dr. Emil A., C.M.Z.S.; Director of the Goeldi Museum, Pará, Brazil.
1893. Reichenow, Dr. Anton, C.M.Z.S.; Museum für Naturkunde, Invalidenstrasse, Berlin.
1903. Ridgway, Robert, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.
1890. Salvadori, Count Tommaso, M.D., F.M.Z.S.; Royal Zoological Museum, Turin.

Colonial Members.

1904. Campbell, Alfred J.; Custom House, Melbourne, Australia.
1903. Legge, Col. W. Vincent, F.Z.S.; Cullenswood House, St. Mary's, Tasmania.
1905. Macoun, John, M.A., F.R.S.C.; Naturalist to the Geological Survey of Canada, Ottawa, Canada.
1905. Millar, Alfred Duchesne; 298 Smith Street, Durban, Natal.
5 1903. North, Alfred J., C.M.Z.S.; Australian Museum, Sydney, N.S.W.

Foreign Members.

1890. Allen, Joel Asaph, Ph.D., F.M.Z.S.; American Museum of Natural History, Central Park, New York, U.S.A.
1900. Bianchi, Dr. Valentine; Imperial Zoological Museum, St. Petersburg.
1904. Blasius, Geh. Hofr. Prof. Dr. Wilhelm, C.M.Z.S.; Gauss-Strasse, 17, Brunswick, Germany.

Date of Election.

1872. Bocage, Prof. J. V. Barboza du, F.M.Z.S.; Royal Museum, Lisbon.

5 1880. Bureau, Louis, M.D.; École de Médecine, Nantes, France.

1906. Büttikofer, Dr. Johannes, C.M.Z.S.; Director of the Zoological Garden, Rotterdam, Holland.

1906. Buturlin, Sergius A.; Wesenberg, Esthonia, Russia.

1902. Chapman, Frank Michler; American Museum of Natural History, Central Park, New York, U.S.A.

1875. Doria, Marchese Giacomo, F.M.Z.S.; Strada Nuova, 6, Genoa, Italy.

10 1902. Ihering, Dr. Herman von, C.M.Z.S.; Museu Paulista, São Paulo, Brazil.

1886. Madarász, Dr. Julius von; National Museum, Buda-Pesth.

1903. Martorelli, Prof. Dr. Giacinto; Collezione Turati, Museo Civico di Storia Naturale, Milan, Italy.

1894. Menzbier, Prof. Dr. Michael, C.M.Z.S.; Imperial Society of Naturalists, Moscow.

1881. Meyer, Dr. Adolf Bernhard, C.M.Z.S., c/o Messrs. Friedlander & Sohn, Carlstrasse 11, Berlin.

15 1905. Oberholser, Harry Church; Biological Survey, Department of Agriculture, Washington, D.C., U.S.A.

1900. Reiser, Dr. Othmar; Landes Museum, Sarajevo, Bosnia, Austro-Hungary.

1894. Schalow, Herman; Flensburgerstrasse, 15, Berlin, N.W. 23.

1900. Stejneger, Leonhard, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

1902. Sushkin, Dr. Peter, C.M.Z.S.; Imperial University, Moscow, Russia.

20 1896. Winge, Herluf, C.M.Z.S.; University Zoological Museum, Copenhagen.

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THE IBIS.

EIGHTH SERIES.

No. XXI. JANUARY 1906.

I.—*A Revision of the Species of the Genus* Pipra.

By C. E. Hellmayr.

(Plate I.)

The characters of the genus *Pipra* of Linnæus (Mus. Adolph. Frid. ii. Prodrom. (1764) p. 22), the type of which, by elimination, is *Pipra aureola*, are too well known to be repeated here. Mr. Sclater, our latest authority on the subject [*], admits eighteen species, besides one subspecies. While I quite agree that *P. filicauda*, *P. cornuta*, *P. iracunda*, and *P. cinnamomea* ought to be separated generically, it seems to me that two more species, viz. *P. gutturalis* and *P. leucorrhoa*, should be excluded from the genus *Pipra*. The narrow, more or less shortened first primary and the slightly elongated throat-feathers clearly indicate their close relation to *Chiromachæris*, and I think that they are better placed in a separate genus, of which the proper name is *Corapipo* Bonap.

Thus restricted, the genus *Pipra* forms a fairly natural group consisting of 19 species and 6 subspecies. Perhaps *P. virescens* and *P. stolzmanni* are the most aberrant members, being of very small size with relatively long wings. If separated generically, the name *Tyranneutes* Scl. & Salv. would become their proper appellation.

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[*] Cat. Birds Brit. Mus. xiv. (1888) pp. 292–303.

In the synonymy, I have usually quoted only the original references for every name; but in some cases where two or more recognisable races have been united under one heading by former writers, I have given the principal references. Special attention has been paid to geographical distribution, and the range of each species and subspecies is stated in full. I have had the advantage of consulting a large amount of material which, in most cases, illustrates very fully the geographical and individual variation of the various forms. Besides the extensive series at Tring, I have examined those belonging to the Vienna Museum and most of the specimens in Count Berlepsch's collection and in the British Museum.

I wish to express my sincere thanks to Count Berlepsch, Dr. Hartert, Dr. L. von Lorenz, and the Hon. W. Rothschild for the help so readily afforded in placing their treasures at my disposal.

Before proceeding to the detailed account, I give a key to the various forms which I hope will prove useful to students of this pretty group.

Key to the Species and Subspecies.

1. Back (except the rump in some species), wings, and tail black.—2.
   No black whatever in the plumage. Back always green.—16.
2. Rump and upper-tail-coverts black like the back.—3.
   Rump and upper-tail-coverts blue.—12.
3. A white band across inner web of the quills.—4.
   No white band across the quills.—6.
4. Whole abdomen bright yellow; a broad yellowish white band across the tail . *P. fasciicauda* ♂.
   Sides of the abdomen and under-tail-coverts black, no white band across the tail.—5.

5.	A narrow frontal band, cheeks, and anterior portion of throat orange-yellow	*P. aureola* ♂.
	Anterior part of the head as far as the eyes, sides of the head and neck, and whole throat bright yellow	*P. a. flavicollis* ♂.
6.	Head bright yellow	*P. erythrocephala* ♂.
	Head above white.—7.	
	Head above blue.—8.	
	Head above red.—9.	
7.	Feathers of the occiput but slightly elongated, blackish at the base. Tail not exceeding 34 mm. in length.	
	Tail 25–30 mm.	*P. leucocilla* ♂.
	Tail 30–34 mm.	*P. l. coracina* ♂.
	Feathers of the occiput snow-white to the base and so much elongated as to form a long, full crest. Tail 36 mm.	*P. l. comata* ♂.
8.	General colour and a broad frontal band deep black	*P. velutina* ♂.
	General colour dull brownish black with a slight violet hue on rump and underparts. No black frontal band	*P. coronata* ♂.
9.	Tail strongly rounded, the outer rectrices being about 5 mm. shorter than the inner. Axillaries black	*P. chloromeros* ♂.
	Tail square. Axillaries never black.—10.	
10.	Thighs and axillaries yellow.—11.	
	Thighs white tipped with red	*P. rubrocapilla* ♂.
11.	Forehead and crown decidedly paler, more orange-red than the occiput. Thighs and a large chin-spot pale yellow. Distinct yellowish edges to the inner web of the remiges	*P. mentalis* ♂.
	Forehead almost as dark red as the occiput. Large yellowish chin-spot, thighs deep gamboge-yellow. Distinct yellowish edges to the inner web of the remiges	*P. m. ignifera* ♂.
	Head and thighs as in *P. m. ignifera*. Chin-angle but narrowly bordered with yellow; no yellowish edges to the inner webs of the remiges	*P. m. minor* ♂.
12.	Whole body beneath black.—13.	
	Abdomen yellow or orange.—15.	

13.	Head above light blue	*P. cæruleocapilla* ♂.
	Head above milky white.—14.	
14.	Rump pale azure-blue	*P. isidorii* ♂.
	Rump whitish blue	*P. i. leucopygia* ♂.
15.	Abdomen and a large spot on the fore-neck clear yellow; forehead as far as the anterior margin of the eye white.	*P. serena* ♂.
	Abdomen orange. No yellow spot on the fore-neck; forehead and anterior portion of the crown white	*P. suavissima* ♂.
16.	Top of the head covered by rather flattened feathers, forming a well-defined sky-blue, white, or opalizant cap.—17.	
	Feathers of the head not different in shape from those of the back, either without any bright colour or with a yellow patch in the centre of the crown.—19.	
17.	Cap sky-blue; feet dark horn-brown . .	*P. exquisita* ♂.
	Cap not blue; feet flesh-coloured.—18.	
18.	Cap and rump white	*P. nattereri* ♂.
	Cap beautifully opalizant; rump green like the back	*P. opalizans* ♂.
19.	Back pure grass-green. (No yellow vertical spot.)—20.	
	Back olivaceous or brownish green.—27.	
20.	Abdomen bright yellow.—21.	
	Lower parts dull green, only the middle line of the abdomen being pale dirty yellowish.—26.	
21.	Feet flesh-coloured; a distinct yellowish-white margin to the inner webs of the remiges.—22.	
	Feet dark horn-brown; no pale margin to the inner web of the remiges.—24.	
22.	Pileum dull bluish....................	*P. nattereri* ♀.
	Pileum green like the back.—23.	
23.	Bill large. Throat, chest, and sides of the body dull greenish, in strong contrast to the clear yellow colour of the abdomen	*P. opalizans* ♀.
	Bill much smaller. Throat, fore-neck, and the innermost sides of the chest scarcely shaded with greenish	*P. gracilis* ♀.
24.	Forehead and crown dull bluish	*P. suavissima* ♀.
	Whole pileum green like the back.—25.	

25.	With a dark green jugular band sharply defined against the clear yellow abdomen. Wing 57 mm.	*P. exquisita* ♀.
	Throat and fore-neck dull greenish olive, this colour insensibly passing into the yellow of the abdomen. Wing 53 mm.	*P. serena* ♀.
26.	Forehead and crown dark grass-green like the back	*P. coronata* ♀. *P. velutina* ♀. *P. cæruleocapilla* ♀.
	Forehead and crown yellowish olive, decidedly different from the dark green back	*P. isidorii* ♀.
27.	Wing never exceeding 53 mm.—28.	
	Wing always more than 55 mm.—29.	
28.	Outermost rectrix much narrowed and shortened, at least 10 millimetres less than the longest. A large bright yellow vertical patch	*P. virescens* ♂ ♀.
	Outermost rectrix quite as long as the middle pair and not abnormally shaped. No yellow vertical spot	*P. stolzmanni* ♂ ♀.
29.	Throat dull yellow	*P. aureola* ♀. *P. fasciicauda* ♀.
	Throat greenish or greyish.—30.	
30.	Axillaries and under-wing-coverts dull grey. Head above slate-grey or mixed with grey.—31.	
	Axillaries and under-wing-coverts pale yellowish or whitish. Head above pure olive-green like the back, without any greyish admixture.—32.	
31.	Top of the head green, mixed with slate-grey. Tail shorter, 25–30 mm.	*P. leucocilla* ♀.
	Top of the head pure slate-grey. Tail 30–34 mm.	*P. l. coracina* ♀.
	Tail 36 mm.	*P. l. comata* ♀.
32.	Tail strongly rounded, the outermost rectrix being about 5 mm. shorter than the longest	*P. chloromeros* ♀.
	Tail square.—33.	
33.	Tail very short, 21–24 mm.	*P. erythrocephala* ♀.
	Tail always more than 25 mm.—34.	
34.	Axillaries and under-wing-coverts pale yellow. Under-parts strongly washed with olive-green	*P. mentalis* ♀. *P. m. ignifera* ♀. *P. m. minor* ♀.
	Axillaries and under-wing-coverts dirty whitish; under-parts greyish green	*P. rubrocapilla* ♀.

1. PIPRA AUREOLA.*

Parus Aureola Linnæus, Syst. Nat. x. (1758) p. 191 (excl. cit. Seba) [based on Edwards, Nat. Hist. Birds, ii. p. 83, tab. 83. fig. 2, "from some part of South America, near the equinoctial line": I select SURINAM as the typical locality].

Pipra rubra P. L. S. Müller, Natursyst. Suppl. (1776) p. 177 [based on D'Aubenton, Pl. enl. 302. fig. 2: CAYENNE].

Pipra aurantia Wagler, Isis (1830), p. 932 [based on Edwards, l. c. tab. 83. fig. 2].

Pipra dubia Madarász, Zeitschr. ges. Orn. iii. (1886) p. 270, tab. ix. (spec. decolor.).

Pipra aureola flaviceps (errore!) Riker & Chapman, Auk, viii. (1891) p. 24 [Santarem, Lower Amazons].

Habitat. CAYENNE: Saint Georges[1], Ouanary[1], Mahury[1] (Geay coll., Mus. Paris). CAYENNE: skins in Mus. Brit., Vindob., Tring, &c.; Cayenne[7] (Desplanches coll.). SURINAM: near Paramaribo and Kwata (Chunkoo coll., Mus. Tring). BRIT. GUIANA: mouth of the Barima (Schomburgk coll.[2]); Bartica Grove[3] (Whitely coll., ♀ in Mus. Brit.). N.E. VENEZUELA: Guanoco in the Orinoco Delta (André coll., ♂ ad. in Mus. Tring); Pilar, near Carúpano, State of Cumaná (Goering[4] & Smith[5] coll.). N. BRAZIL (Lower Amazons): Palhetá, near Pará (Steere coll., 2 ♂ ♂ in Mus. Tring); Santarem (Riker & Natterer[6] coll.); Rio Negro (Natterer coll.).

Typical locality. Not indicated in the original description: I select SURINAM.

Obs.—In the Cat. B. xiv. p. 293, some specimens are recorded from "Trinidad." These are simply trade-skins of the so-called "Trinidad" or "Orinoco" make. Neither Chapman nor André met with the bird on the island, although the latter gentleman transmitted several thousand skins to the Tring Museum. The occurrence of *P. aureola* in Trinidad is therefore not yet ascertained.

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* [In these headings the Editors are responsible for the omission of the authority.]

[1] Ménégaux, Bull. Mus. Paris, 1904, p. 180.

[2] Schomburgk, Reise Brit. Guiana, iii. (1848) p. 696.

[3] Salvin, Ibis, 1885, p. 299.

[4] Scl. & Salv. P. Z. S. 1868, p. 168.

[5] Allen, Bull. Amer. Mus. N. H. iv. (1892) p. 55.

[6] Pelzeln, Orn. Bras. ii. (1868) p. 126 (part.).

[7] Bonaparte, Bull. Soc. Linn. Normandie (Caen), ii. (1857) p. 37.

♂ *ad.* (near Paramaribo, Surinam, 22.1.03; coll. Chunkoo).—Top of the head, nape, sides of the neck, fore-neck, and breast bright scarlet, the bases of the feathers creamy white; a distinct frontal band, lores, cheeks, and fore part of the throat orange-yellow, only the very tips of some of the feathers being red. Back and upper-wing-coverts velvety black; quills rather duller black, with a broad white band across the inner webs. Tail-feathers black, the outermost pair with a narrow white stripe along the shaft at the base of the outer web. Abdomen and under-tail-coverts black, the former pale red in the middle. Thighs whitish, pale yellowish at the tips. Axillaries and under-wing-coverts pale yellowish, edge of the wing bright yellow. Bill black; feet dark red. Wing 62–65; tail 28–32; bill 10–11 mm.

♀ *ad.* (near Paramaribo, Surinam, 12.4.01; coll. Chunkoo).—Upper surface dull greenish olive; wing-coverts, quills, and tail-feathers dark brown with greenish-olive edges. Throat dull olive-yellow; fore-neck and sides of the belly dull greenish olive, the former shaded with yellowish; middle line of the abdomen pale olive-yellowish. Axillaries and under-wing-coverts yellowish white. Upper mandible blackish brown; lower jaw paler brown, brownish white at the base. No white band across the remiges. Wing 63–65; tail 31–33; bill 10–11 mm.

Prof. Steere marks the iris as white in both sexes.

There is a certain amount of individual variation in the shade of the red and in the extent of the yellow colour on the head. Some specimens have the whole throat and a broad frontal band orange-yellow, while in others the latter is barely indicated and only a spot on the chin is clear yellow. I have both varieties from Surinam and the Rio Negro. One ♂ ad. from Palhetá (Pará), several from Surinam, and one each from Santarem and the Rio Negro have a narrow white stripe along the shaft at the base of the outermost rectrix, but in other specimens from the same localities it is altogether wanting. Messrs. Chapman and Riker record *P. a. flaviceps* (misprint for *flavicollis*) from Santarem, but a single ♂ ad. collected by Natterer belongs to the typical *P. a. aureola.* The examples from Pará and the Rio Negro are also absolutely identical with others from Surinam.

The measurements of the males from the different localities are as follows:—

	Wing. mm.	Tail. mm.
3 ♂ ♂ ad. Rio Negro (coll. Natterer, Mus. Vindob.) . .	62–64	29–30
♂ ad. Santarem (coll. Natterer, Mus. Vindob.)	62	28
2 ♂ ♂ ad. Palhetá, Pará (coll. Steere, Mus. Tring) . .	63, 63½	28, 30
1 ♂ ad. Guanoco, Orinoco Delta (coll. André, Mus. Tring)	63½	29
9 ♂ ♂ ad. Surinam (Mus. Tring, Vindob. & Berlepsch)	63–65	28–32
4 ♂ ♂ ad. Brit. Guiana (Mus. Berlepsch & Vindob.) . .	62–65	28–30

There is hardly any doubt that the birds figured by Edwards (*l. c.*) and D'Aubenton, Pl. enl. tab. 34. fig. 3, were simply colour-varieties of *P. aureola.* The type of *P. dubia* Mad. is evidently a discoloured specimen of the same species.

1 *a.* PIPRA AUREOLA FLAVICOLLIS.

Pipra flavicollis Sclater, Contrib. Ornith. for 1851 (publ. 1852) p. 143 [Barra do Rio Negro]; Sclater & Salvin, P. Z. S. 1867, p. 579 ["Mexiana and north side of the Amazons": cf. obs. below].

Pipra aureola Pelzeln, Orn. Brasil. ii. (1868) p. 126 (part.) [Borba, R. Madeira].

Habitat. N. BRAZIL, Lower Amazons: Barra do Rio Negro (*Wallace*); Borba on the Rio Madeira (*Natterer*).

Typical locality. BARRA DO RIO NEGRO.

Type. ♂ ad. Barra do Rio Negro, in Brit. Mus. (ex coll. Sclater).

Obs.—The distribution of this well-marked form is still very imperfectly known. It was originally described from Barra do Rio Negro, but afterwards Sclater and Salvin doubted the correctness of this locality and recorded specimens which were said to be from "Mexiana and north side of the Amazons" (P. Z. S. 1867, p. 579). As a matter of fact, however, the examples collected by Steere near Pará and those obtained by Natterer at Santarem belong to typical *P. aureola*, while two males from Borba on the Rio Madeira (ex coll. Natterer) represent *P. a. flavicollis*. It seems therefore certain that on the Lower Amazons eastwards of Manáos the typical form alone occurs. *P. a. flavicollis*, on the other hand, appears to be confined to some of the southern tributaries of the Amazons. Perhaps Sclater's type-specimen came from the southern bank of the Amazon opposite Manáos.

♂ *ad.*—Differs from *P. a. aureola* only in having the fore part of the crown as far as the eye, the sides of the head and neck (except the upper margin of the ear-coverts), and the whole throat pure bright yellow. The axillaries and under-tail-coverts are also of a brighter yellow.

	Wing. mm.	Tail. mm.	Bill. mm.
Mus. Brit. ♂ ad. Barra (Wallace coll.): type of the subspecies	61½	27	11
Mus. Vindob. 15734, "♂" ad. Borba (Natterer coll.)	63	30	11
Mus. Vindob. 15735, "♂" ad. Borba (Natterer coll.)	60	28	11

In the type the bases of the nape-feathers are creamy white, and on the outermost tail-feathers there is a narrow white shaft-stripe, as in some specimens of typical *P. aureola*. Natterer's examples shew no trace of the latter, and the basal portion of the interscapular feathers is pale yellow.

♀ unknown.

2. Pipra fasciicauda*, nom. nov.

Pipra fasciata Lafresnaye & d'Orbigny, Syn. Av. i. in Mag. Zool. 1837, cl. ii. p. 38 [Yuracares, East Bolivia]; d'Orbigny, Voyage Amér. mérid., Ois. p. 295, tab. 30. fig. 1 [Santa Cruz de la Sierra & Guarayos territory].

Habitat. E. Bolivia: Yuracares, Guarayos, and Santa

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* The name *P. fasciata* Lafr. & d'Orb. is preoccupied by *P. fasciata* Thunberg, 1822 (*cf.* Lönnberg, Ibis, 1903, p. 241).

Cruz de la Sierra (*D'Orbigny*); Falls of the Rio Madeira (Rusby coll.[1]). CENTRAL BRAZIL, MATTOGROSSO: Villa Maria, Engenho do Gama, R. Guaporé, Villa Bella de Mattogrosso, São Vicente (Natterer coll.[2]); Chapada (H. H. Smith coll.[3]); GOIAZ (*Natterer*[2]); NORTH S. PAULO: Rio Paraná (*Natterer*[2]); Faz. Cayoá (Hempel coll., ♂ ♂ ♀ ♀ in Mus. Tring); MINAS GERAES: Rio Jordão, Province Araguay (A. Robert coll., 3 ♂ ♂ in Mus. Tring). N.E. BRAZIL: Rio Tocantins (Wallace coll.[4]). EAST PERU: Ucayali (E. Bartlett coll.[5]); CENTRAL PERU: Chuchurras, prov. Huánuco (W. Hoffmanns coll., 3 ♂ ♂ in Mus. Tring).

Typical locality. YURACARES, E. BOLIVIA.

Type in Mus. Paris ex coll. D'Orbigny.

♂ *ad.* (Mus. Vindob. no. 15046, Villa Maria, Mattogrosso; coll. Natterer).—Top of the head and nape crimson with the bases of the feathers pale yellow, this colour being more visible on the nape; forehead, lores, cheeks, and anterior part of throat distinctly yellow; lower throat, ear-coverts, sides of neck, and whole breast clear yellow with broad crimson tips; abdomen and under-tail-coverts clear yellow, the latter with a distinct black terminal band. Back and upper-wing-coverts velvety black; quills rather duller black with a broad white band across the inner webs. Tail black, crossed by a broad white band, which is slightly tinged with yellowish on the outer webs. Bend and edge of the wing bright yellow; axillaries and under-wing-coverts pale yellowish. Iris white; feet and bill dark violet (A. Robert, MS.), in dried skins reddish black. Wing 65; tail 31; bill 11 mm.

♀ *ad.*—Exactly like the ♀ of typical *P. aureola* and only distinguishable by its rather more yellowish-olive (less greenish) upper surface and decidedly brighter yellow middle of the abdomen. Wing 62–65; tail 29–32; bill 10–11 mm.

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[1] Allen, Bull. Amer. Mus. N. H. ii. (1889) p. 87.

[2] Pelzeln, Zur Ornith. Bras. ii. (1868) p. 127.

[3] Allen, Bull. Amer. Mus. N. H. v. (1893) p. 109.

[4] Scl. & Salv. P. Z. S. 1867, p. 579.

[5] Iid. P. Z. S. 1873, p. 282.

There is very little variation in a large series of males from different localities. Some have the red tips of the breast-feathers and the black apical margins of the under-tail-coverts rather wider than others, but this does not depend on locality. The specimens from Chuchurras, Centr. Peru, shew, perhaps, the throat of a purer yellow; they are, however, exactly matched by one male from Fazenda Cayoá in S. Paulo. As will be seen from the measurements given below, two males from North Bolivia (topotypical) are rather larger, but this is not likely to be a constant character, since the skins from Central Peru are fully as short-winged as those from Brazil.

	Wing. mm.	Tail. mm.	Bill. mm.
2 ♂ ad. S. Mateo, N. Bolivia. Mus. Berlepsch	68, 69	30, 32	12
2 ♂♂. Rio Paraná, S. Paulo. Mus. Vindob.	63, 64	30, 32	11
1 ♂ ad. Villa Maria, Mattogrosso. Mus. Vindob.	65	31	11
1 ♂ ad. Engenho do Gama, Mattogrosso. Mus. Vindob.	63	29	11
1 ♂ ad. Goiaz, Brazil. Mus. Vindob.	64	29	12
2 ♂♂. Villa Bella de Mattogrosso. Mus. Vindob.	64, 65	30	11
3 ♂♂. Rio Jordão, Minas Geraës. Mus. Tring	64–65½	28–29½	10–11
1 ♂ ad. Faz. Cayoá, S. Paulo. Mus. Tring	64	28	10½
3 ♂♂ ad. Chuchurras, Centr. Peru. Mus. Tring	63–64	28–29	10–11

The species has been recorded from the Rio Tocantins, near Pará, by Messrs. Sclater and Salvin. Their specimens are not in the British Museum, so that I could not ascertain myself whether they are really identical with the form inhabiting Western Brazil and Bolivia.

3. PIPRA RUBROCAPILLA.

Pipra rubrocapilla Temminck, Rec. Pl. col. livr. 9, tab. 54. fig. 3 (= ♂ ad.) [Apr. 1821.—"Brésil."—I substitute BAHIA as the typical locality].

Pipra erythrocephala (nec Linnæus!) Lichtenstein, Verz. Dubl. Berl. Mus. 1823, p. 29.

Habitat. EASTERN BRAZIL: Rio de Janeiro (Natterer coll., specimen in Mus. Vindob.); Neu Freiburg (Burmeister coll.[1]); Cantagallo, Rio[2]; Barra de Iucú, Espiritu Santo (Wied coll.[3]); Bahia (many Bahia skins in Mus. H. v. Berlepsch, Vindob., Tring, &c.); Caxangá, a spot between Recife and Beberibé, Pernambuco (W. A. Forbes coll.[4]); S. Lourenço, Pernambuco (A. Robert coll., 4 ♂♂ in Mus. Tring). CENTRAL and WESTERN BRAZIL: Engenho do Gama, Mattogrosso; Borba, Rio Madeira; Manaqueri, Rio Solimoëns (Natterer coll.[5]); Ega (Bates coll.[6]); Rio Juruá (Garbe coll.[7]). NORTH BRAZIL (Lower Amazons): Santarem (Riker coll.[8]); Bemfica and Marea de Legua, environs of Pará (Steere coll., ♂♂ ♀♀ in Mus. Tring). N.E. PERU: Santa Cruz, Ucayali (E. Bartlett coll.[9]); Iquitos (Whitely coll.[10]).

Typical locality selected: BAHIA, EAST BRAZIL.

Type, if still extant, in the Leyden Museum.

Obs.—In the Cat. Birds, xiv. p. 295, Mr. Sclater records a specimen from "Rio Claro, Goiaz (*Joyner*)." This locality requires confirmation. Joyner's skins are without original labels, and the localities in some cases are doubtless wrong, as I shall shew on another occasion.

♂ *ad.* (S. Lourenço, Pernambuco, 13 August, 1903; A. Robert coll. no. 1866, Mus. Tring).—Top and sides of the head (including lores, cheeks, malar region, and earcoverts) bright crimson-red, the feathers of all these parts yellowish white towards the base. Whole body above and below glossy black; the feathers bordering the gonydeal angle pale yellowish. Thighs white, exteriorly bright red. Axillaries blackish or dark greyish, whitish towards the base; larger under-wing-coverts blackish edged with dirty white, under-primary-coverts deep black. Inner secondaries with a distinct white margin along the inner web. Inner webs of the tail-feathers narrowly edged with whitish at the base. Iris blue (A. Robert, MS.); bill pale brown, lower mandible brownish white; feet pale brown.

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[1] Burmeister, Syst. Uebers. Th. Brasil. ii. (1856) pp. 443, 445.

[2] Ihering, Revist. Mus. Paulist. iv. (1900) p. 156.

[3] *P. erythrocephala* Wied, Reise Brasil. i. (1820) p. 187.

[4] Ibis, 1881, p. 344.

[5] Pelzeln, Orn. Brasil. ii. (1868) p. 127.

[6] Scl. P. Z. S. 1857, p. 265.

[7] Ihering, Revist. Mus. Paulist. vi. (1905) p. 435.

[8] Riker & Chapman, Auk, 1891, p. 25.

[9] Scl. & Salv. P. Z. S. 1873, p. 283.

[10] Sclater, Cat. Birds, xiv. (1888) p. 295.

Immature males have the throat white, mixed with blackish.

♀.—Above dull olive-greenish; wings and tail-feathers dark brown, margined with greenish, rather brighter than the back. Sides of the head and lower surface dull greenish, rather greyer on the throat and middle of the breast, and dirty whitish along the middle of the abdomen. Axillaries and under-wing-coverts dirty whitish. Bill and feet as in the male.

♂♂. Wing 60–65; tail 30–34; bill 8–9 mm.

♀♀. Wing 60–62; tail 31–33; bill 8–9 mm.

There is no difference whatever in colour or size between specimens from Bahia, Pernambuco, Mattogrosso, Rio de Janeiro, Manaqueri, Borba, and Santa Cruz, E. Peru.

Two ♂♂ ad. from the vicinity of Pará have the forehead and anterior portion of the crown rather lighter, more orange-red, while in all the other specimens examined these parts are of exactly the same deep crimson as the occiput. They may represent a different race, but I should like to see more specimens before separating it.

4. PIPRA MENTALIS.

Pipra mentalis Sclater, P. Z. S. 1856, p. 299, tab. 121. descr. orig. [Cordova, Vera Cruz]; id. P. Z. S. 1859, p. 285 [Playa Vicente]; Sclater & Salvin, Ibis, 1859, p. 125 [Vera Paz, Guatemala]; iid. P. Z. S. 1870, p. 837 [Coast of Honduras]; Salvin, Ibis, 1872, p. 318 [Chontales, Nicaragua]; Ridgway, Proc. U.S. Nat. Mus. x. 1887 (publ. 1888), p. 589 [Segovia River, Honduras]; Salvin, Ibis, 1889, p.364 [Meco and Mugeres Isl., off the coast of Yucatan]; Richmond, Proc. U.S. Nat. Mus. xvi. 1893 (publ. 1894), p. 509 [Escondido River, Nicaragua]; Salvin & Godman, Biol. Centr.-Amer., Aves, ii. (1890) p. 108 [part.: Mexico, Brit. Honduras, Guatemala, and Nicaragua].

Pipra mentalis mentalis O. Bangs, Bull. Mus. Comp. Zool. Cambridge (Mass.), xxxix. (1903) p. 149 [Ceiba: Honduras].

Habitat. Eastern Mexico: Cordova, Vera Cruz (Sallé coll.); Playa Vicente, Oaxaca (Boucard coll.); Teapa, Tabasco (H. H. Smith coll., Mus. Brit.); Tizimin, Yucatan (Gaumer coll., Mus. Brit.); Meco and Mugeres Island, off the coast of Yucatan (Gaumer coll.). Guatemala: Choctum and sources of the Rio de la Pasion in Vera Paz (Salvin coll.). British Honduras: Orange Walk (Gaumer coll.); Cayo (Blancaneaux coll.). Honduras: Ceiba (W. W. Brown, jr., coll.); Chamelicon River (G. Whitely coll.); Segovia R. (Townsend coll.). Nicaragua: Chontales (Belt coll.); Escondido River [=Bluefields R.] (Richmond coll.); La Libertad (W. B. Richardson coll., Mus. Brit.).

Typical locality. Cordova, Vera Cruz, East Mexico.

Types. ♂ ♀ from Cordova, coll. Sallé, in Mus. Brit.

♂ *ad.* (Coban, Vera Paz, Guatemala).—Top and sides of the head and nape clear crimson-red, the bases of the feathers pale yellowish; front and anterior part of the crown rather lighter, more orange-red than the occiput and nape. A large chin-spot and thighs pale yellow. Under-wing-coverts and axillaries yellowish white, the under-primary-coverts black. Rest of body above and beneath glossy black; quills dull black, with very distinct yellowish-white edges to the inner webs. Base of tail-feathers slightly edged with white interiorly. Bill pale brownish, lower mandible whitish; feet pale brownish. Wing 58–62; tail 29–30; bill 9 mm.

♀.—Similar to that of *P. rubrocapilla*, but dull greenish olive, not so greyish, on the under-parts and the axillaries pale yellowish (not whitish). Wing 58–60; tail 28–30; bill 9 mm.

Specimens from the Chamelicon River in Honduras and from Chontales and La Libertad in Nicaragua are practically identical with those from E. Mexico and Guatemala. All have the thighs very pale yellow, the axillaries pale yellowish or even yellowish white, and the pale yellow chin-spot fairly extended. The inner webs of the quills always shew very distinct yellowish-white margins.

In *P. mentalis* and its southern forms the tail is quite square as in *P. rubrocapilla*, and is thus very different in shape from that of *P. chloromeros*.

The female is very much like that of *P. rubrocapilla*, but generally the lower parts are rather more greenish and the middle of the abdomen more yellowish. The best character, however, consists of the pale yellowish (not whitish) axillaries and under-wing-coverts.

4 *a*. PIPRA MENTALIS IGNIFERA.

Pipra mentalis ignifera Bangs, Auk, xviii. (1901) p. 363 [Divala, Chiriqui], descr. orig. ♂.

Pipra mentalis (nec Sclater!) Sclater & Salvin, P. Z. S. 1864, p. 362 [Lion Hill Station, Panama]; Lawrence, Ann. N. Y. Lyc. ix. (1868) p. 116 [Angostura, Paiz, and Tucurriqui: Costa Rica]; v. Frantzius, Journ. f. Ornith. 1869, p. 309 [Costa Rica]; Salvin, P. Z. S. 1870, p. 200 [Bugaba and Mina de Chorcha, Chiriqui]; Boucard, P. Z. S. 1878, p. 66 [San Carlos, Costa Rica]; Underwood, Ibis, 1896, p. 439 [Miravalles].

Chiroxiphia mentalis Lawrence, Ann. N. Y. Lyc. vii. (Jan. 1861) p. 296 [Panama Railroad].

Habitat. PANAMA: Lion Hill Station (McLeannan coll.); Sevilla Island, off the coast of Panama (J. H. Batty coll., Mus. Tring). CHIRIQUI: Divala (W. W. Brown, jr., coll.); Bugaba and Mina de Chorcha (Arcé coll.); Bogava, 800 feet (Watson coll., Mus. Tring). COSTA RICA: Angostura and Paiz (J. Carmiol coll.); Tucurriqui (J. Zeledon coll.); Miravelles (Underwood coll.); Boruca (G. K. Cherrie coll., Mus. Tring); Pozo Azul Pirris (Underwood coll., Mus. Tring).

Typical locality. Divala, Chiriqui.

Type in coll. E. A. & O. Bangs, Boston, no. 7823, ♂ ad. Divala, Chiriqui (W. W. Brown coll.).

♂ *ad.* (Bogava, Chiriqui, 800 feet, 6 Oct., 1903; coll. Watson).—Easily distinguished from the typical form by having the head of a much darker crimson-red, the forehead being very slightly or not at all paler than the crown and occiput; the axillaries and under wing-coverts rather brighter yellow and the thighs much more intense, of a deep gamboge-yellow. The black of the under-parts is rather deeper and more glossy. As in the typical form, there is a large pale yellow chin-spot, and the quills (except the outer primaries) have very distinct yellowish-white inner margins.

♀.—Exactly like that of the typical form, but upper- and under-parts decidedly brighter-olive greenish, with the middle of the abdomen and the thighs more deeply yellowish.

Specimens from Costa Rica are absolutely identical with typical Chiriqui skins and shew no approach to *P. m. mentalis.* Two males from Sevilla Island, off Panama, are not different.

I have taken the following measurements:—

	Wing.	Tail.	Bill.
♂♂.	mm.	mm.	mm.
8: Chiriqui	57–60	26–28	9–10
2: Sevilla Isl., Panama	60	26, 27	9½, 10
9: Costa Rica (Pozo Azul Pirris and Boruca)	57½–61	27–28	9½–10
♀♀.			
3: Chiriqui	59–61	28–29	10
3: Costa Rica	60–62	28½–30	9½–10

4 *b*. Pipra mentalis minor.

Pipra mentalis minor Hartert, Nov. Zool. v. (1898) p. 489 [Cachabi, N. Ecuador].

Pipra mentalis subsp. *minor* (sic!) Salvadori & Festa, Boll. Mus. Zool. Torino, xiv. no. 362 (1899), p. 14 [Rio Peripa, W. Ecuador].

Habitat. Western Ecuador: Cachabi, 500 feet (Rosenberg coll.); S. Javier and Carondelet, 60 feet (Flemming coll., Mus. Tring et Vindob.); Rio Peripa (Festa coll.).

Typical locality. CACHABI, NORTH ECUADOR.

Type in Mus. Tring: "♂" ad. Cachabi, N. Ecuador, 500 feet, 7.1.97 (W. F. H. Rosenberg coll., no. 207).

♂ *ad.*—Agreeing with *P. mentalis ignifera* in the deep gamboge-yellow thighs and the deep black lower parts, but differing in the following points: the crimson of the head is still more intense, this being particularly noticeable on the forehead and occiput; the gonydeal angle is but narrowly bordered with yellow; the inner secondaries alone shew very narrow, indistinct, yellowish-white edges on the inner webs; the bill is rather smaller and weaker, the wing on average shorter.

Ten ♂ ♂ from various places in N.W. Ecuador (including the type) measure: wing 55–58; tail 26–28; bill 8–9 mm.

♀ *ad.*—Exactly like that of *P. mentalis ignifera,* but on average slightly smaller, and with axillaries and under-wing-coverts rather brighter yellow.

Five ♀ ♀ measure: wing 57–59; tail 27–28; bill 8½–9 mm.

In the original description, Hartert mentions two "Bogotá" skins belonging to this form. They are now before me, and I find that they are certainly not Bogotá skins, their make being quite different and, I may add, wholly unknown to me. Probably they come from some part of Northern Colombia. They agree in all essential points with Ecuadorian specimens, but the primaries have slight whitish inner edges. The wing is 55, the tail 28 mm. It remains to be ascertained how far north *P. m. minor* extends its range.

5. PIPRA CHLOROMEROS.

Pipra chloromeros Tschudi, Archiv Naturg. 10, i. (1844) p. 271 [PERU, sc. "Montañas des nordwestlichen Peru."—*Cf.* Faun. Peru., Aves, pp. 144, 145].

Habitat. NORTH PERU: Guayabamba, 4500 feet elev.

(O. T. Baron coll., Mus. Tring); Huambo[1] (Stolzmann coll.). CENTRAL PERU: Amable Maria, Monterico[2] (Jelski coll.); La Gloria, La Merced and Borgoña, 3200 feet elev.[3] (Kalinowski coll.); Pozuzo, prov. Huánuco, 2400 feet elev. (Hoffmanns coll., Mus. Tring). S.E. PERU: Cosnipata[4] (H. Whitely, jr., coll.). EAST BOLIVIA: Baganti, Yungas[5] (Buckley coll.); San Mateo (G. Garlepp coll., Mus. H. v. Berlepsch & Vindob.); Yuracares, Santa Cruz (D'Orbigny coll.).

Typical locality. Montañas of NORTH PERU.

Type in Mus. Neuchâtel, collected by J. J. v. Tschudi.

Obs.—It must remain doubtful whether the birds from Santa Cruz, E. Bolivia, referred to by d'Orbigny and Lafresnaye as *P. rubrocapilla*[6], belong to the latter species or to *P. chloromeros*, since the description of the thighs—"cruribus flavescentibus externis, in infima parte coccineis"—does not quite suit either. It is true that I have seen only *P. chloromeros* from Bolivia, but all the specimens which I have examined came from the northern part of that country, and it is not impossible that *P. rubrocapilla*, which occurs in Mattogrosso, extends its range to the eastern slopes of the Andes in Central Bolivia[7].

♂ *ad.* (Mus. Tring, "♂" ad. La Gloria, Centr. Peru, 5 Aug., 1890; J. Kalinowski coll. no. 829).—Top and sides of the head bright crimson-red, the feathers yellowish white at the base. Thighs pale yellow, of the same shade as in typical *P. mentalis*. Whole body above and beneath, including axillaries and under wing-coverts, glossy black. No trace of a yellowish border on the chin-angle. Bill pale brownish, lower mandible whitish horn-coloured; feet pale brown; iris yellowish white (J. Kalinowski, MS.). Wing 61; tail 27; bill 8½ mm.

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[1] Tacz. P. Z. S. 1882, p. 22.

[2] Id. P. Z. S. 1874, p. 539.

[3] Berl. & Stolzm. P. Z. S. 1896, p. 368.

[4] Scl. & Salv. P. Z. S. 1869, p. 598.

[5] Iid. P. Z. S. 1879, p. 617.

[6] *Pipra rubrocapilla* Lafr. & Orb. Syn. Av. in Mag. Zool. cl. ii. 1837, p. 38; d'Orbigny, Voyage, Ois. p. 294 [Santa Cruz de la Sierra, Yuracares, Bolivia].

[7] D'Orbigny's two specimens, male adults, from Yuracares and Santa Cruz respectively, are now before me. They both belong to *P. chloromeros*.

♀ *ad.*—Agreeing with that of *P. mentalis ignifera* and *P. m. minor* in having the under-parts strongly washed with dull olive-greenish, except the pale yellowish middle of the abdomen, but easily known by its distinctly rounded (not square) tail. Wing 61–64; tail 27–30; bill 8–9 mm.

There is no appreciable difference between the males from different parts of Peru, either in size or colour. Some specimens shew a few pale red feathers on the thighs, but the latter are always pale yellow, never red and white as in *P. rubrocapilla.* The axillaries and under-wing-coverts are usually uniform black, margined only in immature birds with greyish or whitish.

Measurements.

	Wing. mm.	Tail. mm.	Bill. mm.
3 ♂ ♂ ad. Guayabamba and Huambo, Northern Peru	61–63	29	9–9½
2 ♂ ♂. Pozuzo, Huánuco	62, 63	28, 30	8
3 ♂ ♂. La Gloria, Centr. Peru	60, 61½	27, 28	8–9

The adult male of *P. chloromeros* differs from that of *P. rubrocapilla,* besides having yellow thighs, in its deep black axillaries and under-wing-coverts, in lacking the whitish edges to the inner webs of the secondaries, and in the form of the tail. The latter is distinctly rounded, the outermost tail-feather being the shortest and about 5–6 mm. less than the longest. The shafts of the outer rectrices are stiff and rather thickened at the base, a peculiarity already noticed by Taczanowski[1]. In *P. rubrocapilla* and *P. mentalis* the tail is quite square, and the shafts of the outer rectrices are soft and thin.

The female is also easily known by its distinctly rounded tail (the outermost rectrix about 5 mm. shorter than the longest); while it is quite square in *P. mentalis, P. rubrocapilla,* and *P. erythrocephala.*

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[1] Orn. Pérou, ii. p. 339.

6. PIPRA ERYTHROCEPHALA.

Parus erythrocephalus Linnæus, Syst. Nat. x. (1758) p. 191 [based on Klein and Edwards: "in America australi." I select SURINAM, ex Edwards, as the type-locality].

Pipra aurocapilla Lichtenstein, Verz. Dubl. (1823) p. 29 ["Brasil"].

Habitat. SURINAM: Maroni River[1] (Kappler coll.). CAYENNE: Mahury[2] (Geay coll.); specimens of Cayenne make in Mus. Brit., Berlepsch, &c. BRITISH GUIANA: Bartica Grove, Camacusa, Merumé Mts., River Atapurow, Roraima[3] (H. Whitely coll.). VENEZUELA: Guanoco in the Orinoco Delta (E. André coll., Mus. Tring); Campos Alegre near Cumaná (Caracciolo coll., ♂ ad. in Mus. Tring); Puerto Cabello (Starke coll., Mus. Berlepsch); Maipures, Samborge and Nericagua: Orinoco River[1]; Suapure, La Pricion, Nicare, and La Union: Caura R.[4], a southerly tributary of the Orinoco (E. André & Klages coll.). TRINIDAD (P. Rendall & André coll., many specimens in Mus. Tring). NORTH BRAZIL: Pará[5] (Layard coll.), River Capim[6] (Goeldi coll.); Barra do Rio Negro; Barcellos, Marabitanas, Rio Içanna, San Pedro; all on the Rio Negro[7] (Natterer coll.); Tocantins[8], R. Solimoëns (G. Garlepp coll.). N.E. PERU: Pebas[9], R. Tigre (J. Hauxwell coll., Mus. Brit., Vindob. & Berlepsch); Nauta[9] and Chyavetas[9] (E. Bartlett coll.); Iquitos[10] (in coll. Raimondi). EASTERN ECUADOR: Gualaquiza[11][12] (Fraser & Festa coll.); Zamora[12] (Festa coll.); Coca, Upper Napo[13] (Goodfellow & Hamilton coll.). COLOMBIA: Bogotá coll. (in Mus. Berlepsch, Tring,

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[1] Sclater, Cat. B. xiv. p. 296.

[2] Ménégaux, Bull. Mus. Paris, 1904, p. 180.

[3] Salvin, Ibis, 1885, p. 300.

[4] Berlepsch & Hartert, Nov. Zool. ix. (1902) p. 53.

[5] Ibis, 1873, p. 384.

[6] Ibis, 1903, p. 499.

[7] Pelzeln, Orn. Brasil. ii. (1868) p. 127.

[8] Berlepsch, J. f. O. 1889, p. 99.

[9] Scl. & Salv. P. Z. S. 1873, p. 283.

[10] Tacz. Orn. Pérou, ii. (1884) p. 340.

[11] Sclater, P. Z. S. 1858, p. 457.

[12] Salvadori & Festa, Boll. Mus. Torino, xiv. no. 362 (1899) p. 14.

[13] Goodfellow, Ibis, 1901, p. 708.

Vindob., &c.) ; Bucaramanga[1] (Minlos coll.) ; Remedios and Neche, Antioquia[2] (Salmon coll.) ; Santa Marta[3] (Simons, W. W. Brown, & H. H. Smith coll.) ; Rio Dagua (W. Rosenberg coll., Mus. Tring). PANAMA : Chepo[4] (Arcé coll.).

Typical locality. SURINAM (*fide* Edwards).

♂ *ad.* (No. 4230, Mus. Berlepsch : Cayenne).—Top and sides of the head golden yellow, bordered on the nape by a narrow but distinct blood-red margin ; whole body above and beneath glossy black ; tibial feathers white on the lower portion, with long bright crimson tips. Axillaries, under-wing-coverts, and lower surface of the wing black. Bill whitish, upper mandible more brownish white ; feet flesh-coloured ; iris white (Rosenberg and Cherrie, MS.). Tail square. Bill 8–9 mm.

♀ *ad.*—Upper-parts dull olive-greenish ; wings and tail dark brown, margined with the colour of the back. Sides of the head and under surface rather duller greenish than the back ; middle of the abdomen yellowish white. Axillaries and under-wing-coverts whitish, the latter slightly tinged with yellowish at the tips. Inner webs of the remiges very indistinctly edged with whitish.—Exactly like *P. rubrocapilla* ♀, perhaps rather more greenish underneath, but easily known by its short tail, which never exceeds 25 mm. in length. Wing 57–61 ; tail 21–24 ; bill 8–9 mm.

There is a large amount of variability in the intensity of the yellow colour of the head and the development of the red border on the nape. I have examined 103 adult males from the following localities :—

	Wing. mm.	Tail. mm.
1 : Cayenne	57	24
3 : Surinam	55–57	22–24
1 : Merumé Mts., Brit. Guiana	54	22
2 : Pará	Moulting.	

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[1] Berlepsch, Journ. f. Ornith. 1884, p. 304.

[2] Scl. & Salv. P. Z. S. 1879, p. 516.

[3] Salv. & Godman, Ibis, 1880, p. 169 ; Bangs, Proc. Biol. Soc. Wash. xii. (1898) p. 137 ; Allen, Bull. Amer. Mus. N. H. xiii. (1900) p. 156.

[4] Sclater, Cat. B. xiv. p. 296.

	Wing. mm.	Tail. mm.
5 : Barra do Rio Negro	53–55	21–23
2 : Barcellos, Rio Negro	54, 55	20, 22
5 : Upper Rio Negro (Marabitanas, R. Içanna, Rio Xié)	55–56	20–22
6 : N.E. Peru (Pebas, Rio Tigre, Chyavetas)	56–60	20–23
2 : Rio Napo, E. Ecuador	60	21½
29 : Bogotá skins	56–60	20–23
1 : Rio Dagua, W. Colombia	57	22
1 : Santa Marta	Moulting.	
16 : Caura River	55–57½	20–22
5 : Maipures, Orinoco	54–56	20–21
4 : Guanoco, Orinoco Delta	55–57	21–23
1 : Cumana	57	21
2 : Puerto Cabello	59, 60	25, 24
17 : Trinidad	57–59	22–24

The specimens from Cayenne, Surinam, Guiana, the Lower Amazons, and one from Barcellos agree among themselves in having the crown of a pure golden yellow with a distinct blood-red border posteriorly; those from the Orinoco, Upper Rio Negro (including one from Barcellos), N.E. Peru, E. Ecuador, and most of the Bogotá skins have the crown decidedly paler yellow and the red border wanting or barely indicated. The series from Trinidad, Cumana, Puerto Cabello, and Guanoco varies in the contrary direction, the head being much deeper, more orange-yellow, and the red border decidedly broader and of a deeper blood-red. The examples from the Caura River, however, are so variously intermediate between the typical race from Guiana and the orange-capped one from N. Venezuela that I do not venture, for the present at least, to make any separation. In Bogotá collections there are occasionally specimens to be found which have the cap quite as bright orange-yellow as those from Trinidad &c. Very likely they come from the mountain-ranges north or west of Bogotá.

7. PIPRA LEUCOCILLA.*

Pipra leucocilla Linnæus, Mus. Ad. Fridr. ii. Prodr.

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* Whether the specimen from S. Cristobal, W. Venezuela [Scl. & Salv. P.Z.S. 1875, p. 237, "*P. leucocilla*"], belonged to the typical form or to *P. l. coracina* must remain doubtful. It is not in the Brit. Museum.

p. 33 [1764—loc. ign.—I select SURINAM as the typical locality]; Cabanis in Schomburgk, Reise Brit. Guiana, iii. (1848) p. 697 [Brit. Guayana]; Burmeister, Syst. Uebers. Th. Brasil. ii. (1856) p. 444 [Neu Freiburg, Rio]; Sclater, P. Z. S. 1857, p. 265 [Ega, W. Brazil]; Sclater & Salvin, P. Z. S. 1866, p. 190 [Sarayacu, E. Peru]; iid. l. c. 1867, p. 751, pt. [Xeberos, Yurimaguas]; iid. l. c. 1873, p. 283, pt. [Sarayacu, Chamicuros, Xeberos, Yurimaguas]; iid. l. c. 1867, p. 580 [Pará]; Salvin, P. Z. S. 1867, p. 149 [Cordillera de Tolé; Veragua]; Pelzeln, Zur Orn. Brasil. ii. (1868) p. 127 [Barra do Rio Negro, Marabitanas, Rio Içanna]; Salvin, P. Z. S. 1870, p. 200 [Calovevora, Chitra, Boqueti de Chitra: Veragua]; Layard, Ibis, 1873, p. 384 [Pará]; Taczanowski, P. Z. S. 1882, p. 22 [Yurimaguas]; id. Ornith. Pérou, ii. (1884) p. 341 [part., Yurimaguas]; Salvin, Ibis, 1885, p. 300 [Bartica Grove, Camacusa, Merumé Mts.]; W. L. Sclater, Ibis, 1887, p. 318 [Maccasseema, Brit. Guiana]; P. L. Sclater, Cat. Birds Brit. Mus. xiv. (1888) p. 297; Ihering, Revist. Mus. Paulist. iv. (1900) p. 156 [Cantagallo, Rio]; Berlepsch & Hartert, Nov. Zool. ix. (1902) p. 53 [Suapure, La Pricion, and Nicare, all on the Caura R., Venezuela]; Goeldi, Ibis, 1903, p. 499 [Capim R.]; Ihering, Revist. Mus. Paulist. vi. (1905) p. 435 [Rio Juruá, W. Brazil].

Pipra leucocapilla Gmelin, Syst. Nat. 1, ii. (1788) p. 1002 [based on Linnæus]; Wied, Reise Brasil. i. (1820) p. 187 [Barra de Juçu, Espiritu Santo]; id. Beitr. iii. (1830) p. 427 [Eastern Brazil].

Pipra cephaloleucos Thunberg, 1822 (*cf.* Lönnberg, Ibis, 1903, p. 241).

Habitat. CAYENNE: Camopi, Mahury, Oyack Mts.[1] (Geay coll., Mus. Paris). SURINAM: Maroni River (Kappler coll.). BRITISH GUIANA: Bartica Grove, Camacusa, Merumé Mts. (H. Whitely, jr., coll.); Mines district (♂♂ in Mus. Tring); Maccasseema, 60 miles from Georgetown (W. L. Sclater coll.). EAST VENEZUELA: Suapure, La Pricion, and

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[1] Ménégaux, Bull. Mus. Paris, 1904, p. 180.

Nicare, Caura River, a southern tributary of the Orinoco (Klages & André coll.). N. BRAZIL: Pará (Wallace, Layard, & Steere coll.); Capim River (Goeldi coll.); Benevides and Marguary, near Pará (Steere coll., ♂ ♂ in Mus. Tring); Barra do Rio Negro (Natterer coll.); Marabitanas and R. Içanna, Upper Rio Negro (Natterer coll.). EASTERN BRAZIL: Bahia (Bahia skins in Mus. Berlepsch, Tring, Vindob., &c.); Barra de Jucú, Espiritu Santo (*Wied*); Neu Freiburg, Rio (*Burmeister*); Cantagallo, Rio (*fide* Ihering). N.W. BRAZIL: Ega (Bates coll.); Rio Juruá (Garbe coll.). N.E. PERU: Sarayacu, Chamicuros, Xeberos, and Yurimaguas (E. Bartlett coll.), Yurimaguas (Stolzmann coll.). VERAGUA: Cordillera de Tolé, Calovevora, Chitra, Boqueti de Chitra (E. Arcé coll.).

Obs.—In Cat. Birds Brit. Mus. xiv. p. 298, Dr. Sclater mentions a female as having been obtained near SAN PAULO, Brazil, by Joyner. As I remarked under *P. rubrocapilla*, Joyner's localities are not reliable, and the occurrence of *P. leucocilla* within the limits of the State of S. Paulo requires confirmation.

♂ *ad.* (Camacusa, Brit. Guiana, 29 March, 1882; coll. by H. Whitely, Mus. Tring).—Top of the head white, the feathers of the occiput slightly elongated and blackish at the extreme base. Whole remaining plumage glossy black; inner webs of quills and tail-feathers dull blackish brown. Axillaries and under-wing-coverts black. Bill blackish, extreme tip of under mandible pale; feet dark brown; iris cherry-red (J. B. Steere, MS.). Wing 63; tail 26; bill 9½ mm.

♀ *ad.*—Upper surface pale olive-green, much brighter and purer than in all the foregoing species; head and nape distinctly shaded with greyish, though the green colour is still predominant; wings and tail dusky, edged with olive-green like the back. Sides of the head dull greyish with a slight greenish tinge. Under-surface pale greyish; chest and sides more or less washed with dull greenish. Axillaries and under-wing-coverts darker grey. Bill blackish; lower jaw greyish horn-coloured or even whitish; feet dark brown;

iris reddish orange (S. M. Klages, MS.), dark red (A. Robert, MS.).

There is no constant difference in size or colour between specimens from various localities. Two males from Veragua agree in dimensions with typical birds from the Guianas, while the form inhabiting the highlands of Colombia, Ecuador, and Northern Peru is considerably larger.

On the other hand, there is a good deal of individual variation in the females. Some are nearly uniformly cinereous below, shewing only a slight greenish suffusion across the chest and along the sides. I have such specimens from Chamicuros and the Caura River, Venezuela. Other examples from the same places, however, are much more greenish, being almost devoid of grey on the lower parts. In most specimens the head is distinctly mixed with greyish, only in a few is this scarcely apparent. The back is always of a purer and brighter olive-green than in the female of the foregoing species.

Specimens from various localities measure as follows:—

	Wing. mm.	Tail. mm.
♂♂ ad.		
3: Brit. Guiana	63–65	25–26
2: Pará	60, 62	23, 25
7: Rio Negro	60–64	25–28
3: Bahia	60–63	25–27
6: Chamicuros, E. Peru	58–62	25–27
3: Suapure, Caura	64–66½	25½–28
8: Nicare, Caura[1]	64–67	27–30
8: La Pricion, Caura[1]	64–66	27–29
1: "Orinoco" male	64	27
2: Veragua	59½, 60½	27
♀♀.		
1: Brit. Guiana	65	26
2: Pará	61, 62	25, 27
8: Rio Negro	59–64	26–28
2: Bahia	60, 64	27
4: Chamicuros, E. Peru	59–62	26–27
2: Xeberos, E. Peru	59, 60	25, 26
6: Caura River[1]	64–67	26–30

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[1] As will be observed, the Caura specimens are rather larger on average.

7 *a.* PIPRA LEUCOCILLA CORACINA.

Pipra coracina Sclater, P.Z.S. 1856, p. 29, descr. orig. ♂ ♀ [Bogotá coll.]; id. P.Z.S. 1858, p. 71 [Rio Napo]; Taczanowski, P.Z.S. 1882, p. 22 [Chirimoto, N. Peru]; id. Orn. Pérou, ii. (1884) p. 312 [Chirimoto and Huambo, N. Peru].

Pipra leucocilla (nec Linnæus!) Sclater, P.Z.S. 1854, p. 114 [Quixos, E. Ecuador]; id. P.Z.S. 1855, p. 152 [Bogotá coll.]; Sclater & Salvin, P.Z.S. 1867, p. 751 [part., Chyavetas, E. Peru]; iid. P.Z.S. 1873, p. 283 [part., Chyavetas]; Sclater, Cat. Birds Brit. Mus. xiv. (1888) p. 297 [part., Veragua, Bogotá, Ecuador]; Salvadori & Festa, Boll. Mus. Torino, xiv. no. 362 (1899) p. 14 [Gualaquiza, E. Ecuador]; Goodfellow, Ibis, 1901, p. 709 [Baeza, East Ecuador].

Habitat. COLOMBIA: Bogotá coll. (in Mus. Brit., Berlepsch, Tring, &c.). EASTERN ECUADOR: Baeza, 5900 feet (Goodfellow & Hamilton coll.); Gualaquiza (Festa coll.); Sarayacu (Buckley coll., in Mus. Brit.); Quijos (*fide* Sclater); Rio Napo (*fide* Sclater, *ex* Verreaux). NORTH PERU: Chyavetas (Bartlett coll.); Guayabamba, 5500 feet (O. T. Baron coll., Mus. Tring); N. Loreto, 3600 feet (G. A. Baer coll., Mus. Tring); Chirimoto, 5400 feet, and Huambo, 3700 feet (Stolzmann coll.). CENTRAL PERU: Chuchurras,[1] near Pozuzo, prov. Huánuco, 1260 feet (W. Hoffmanns coll., Mus. Tring).

Typical locality. BOGOTÁ (trade-collections).

Types. ♂ ♀ in Mus. Brit. ex coll. P. L. Sclater.

♂ *ad.*—Only distinguishable from the typical form by its rather larger size, and especially the longer tail. As in typical *P. leucocilla,* the feathers of the occiput are but slightly elongated and blackish at the base. Wing 65–70; tail 30–34; bill 9–10 mm.

♀.—Easily known from that of the typical form by its longer tail and by having the head and neck of a pure slaty-grey colour without any trace of greenish. The breast and sides are much deeper olive-green, only the throat and middle of the abdomen being dull greyish. Wing 65–68; tail 32–34 mm.

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[1] Chuchurras, a small village not far from Pozuzo, is situated on the Rio Pozuzo where it drains into the R. Palcazu.

Typical Bogotá skins are, as a rule, duller and deeper black without the metallic gloss so conspicuous in Peruvian specimens; but one is quite indistinguishable from the latter. Specimens from North Peru (Chirimoto and Guayabamba) and East Ecuador are practically identical; two males from Huánuco belong likewise to *P. l. coracina*, and are very different from the subspecies found in the Chanchamayo region. *P. l. coracina* seems to be an inhabitant of high elevations, where it apparently replaces the typical form. It is interesting to note that a female from Chyavetas is referable to *P. l. coracina*, while the specimens from Xeberos and Chamicuros belong to typical *P. leucocilla*.

The males from different localities give the following measurements:—

	Wing. mm.	Tail. mm.
6 : Bogotá collections	69–70	30–32
1 : Baeza, E. Ecuador	66	33½
1 : Chirimoto, N. Peru	66	31
4 : Guayabamba, N. Peru	65–67	32–34
2 : Chuchurras, Huánuco	67–68	31

7 *b*. PIPRA LEUCOCILLA COMATA.

Pipra comata Berlepsch & Stolzmann, Ibis, 1894, p. 392 [La Gloria and Garita del Sol, Central Peru]; iid. P. Z. S. 1896, p. 368 [as above].

Habitat. CENTRAL PERU: La Gloria, Chanchamayo; Garita del Sol, Vitoc, 5700 feet (Kalinowski coll., Mus. H. v. B., Branicki, et Tring).

Types in Mus. H. v. Berlepsch; cotypes in Mus. Branicki and Tring.

♂ *ad.*—Easily distinguished from *P. l. coracina* by its longer tail and by the feathers of the occiput being so much elongated as to form a conspicuous full crest. These lengthened feathers are, moreover, pure white, and entirely lack the blackish bases to be seen in typical *P. leucocilla* and *P. l. coracina*. Wing 69–70; tail 36; bill 10 mm.

♀ *ad.*—Similar to that of *P. l. coracina*, but with the tail longer, and the slaty grey of the head rather paler and extended over the whole nape. Wing 70; tail 36; bill 10 mm.

The descriptions and measurements are taken from the types in Count Berlepsch's collection and a topotype in the Tring Museum.

8. Pipra isidorii.

Pipra isidorei Sclater, Rev. Zool. 1852, p. 9, descr. orig. ♂ [Bogotá coll., Mus. Paris].

Pipra isidori Sclater, P. Z. S. 1854, p. 114 [Quijos, E. Ecuador]; id. P. Z. S. 1855, p. 152 [Bogotá coll.]; id. Cat. Birds Brit. Mus. xiv. (1888) p. 298 [Bogotá coll. and Sarayacu, E. Ecuador]; Goodfellow, Ibis, 1901, p. 708 [Baeza, E. Ecuador].

Habitat. Colombia: Bogotá coll. East Ecuador: Quijos (*fide* Sclater). Sarayacu (C. Buckley coll., in Mus. Brit.); Baeza (Goodfellow & Hamilton coll., Mus. Tring).

Typical locality. Bogotá (trade-collections).

Type. ♂ ad. in Mus. Paris ex Lewy.

♂ *ad.* (Bogotá coll., Mus. Tring).—Top of the head covered with somewhat elongated, lamelliform milky-white feathers, which are blackish grey at the extreme base; on the posterior margin of the white cap a very narrow pale bluish border. Rump and upper-tail-coverts beautiful pale azure-blue, the bases of the feathers black. Lores, auriculars, sides of the neck, back, wings, and tail dull velvety black; under-surface rather duller, more brownish black; throat and under-tail-coverts with a slight bluish hue. Axillaries and under-wing-coverts blackish brown. Bill blackish, lower mandible dull whitish or pale brownish; feet dark horn-brown. Tail square.

Twenty-two specimens from Bogotá and East Ecuador measure: wing 49–52; tail 22–24; bill 8–9 mm.

♀ *ad.*—Above dark grass-green; cap decidedly paler, about oil-green, and passing into yellowish green on the forehead. Wing- and tail-feathers dark brown, edged with the colour of the crown. Lores yellowish green, auriculars and sides of the neck green like the back. Throat, chest, and sides dull greenish, middle of breast and abdomen including lower tail-coverts pale yellowish. Axillaries and under-wing-coverts dirty white. Bill and feet as in the male. Wing 51–54; tail 23–24; bill 8–9 mm.—The female closely resembles that of *P. coronata*, but is smaller and easily known by its yellowish oil-green cap.

One ♂ ad. from Baeza, East Ecuador, is absolutely identical with typical Bogotá skins and shews no approach to *P. i. leucopygia.*

8 *a*. PIPRA ISIDORII LEUCOPYGIA.

Pipra isidorei leucopygia Hellmayr, Verhandl. zool.-bot. Gesellsch. Wien, 1903, p. 200, descr. orig. ♂ ad. [Huambo, N. Peru].

Pipra isidori (nec Sclater!) Taczanowski, P. Z. S. 1882, p. 23 [Huambo]; id. Orn. Pérou, ii. (1884) p. 342 [Huambo].

Habitat. NORTH PERU, in the Huayabamba Valley: Huambo, 3700 feet (Stolzmann coll., specimens in Mus. Varsovia, Berlepsch, & Vindob.), Guayabamba, 5500 feet (O. T. Baron coll., ♂ ad. in Brit. Mus.).

Typical locality. HUAMBO, NORTH PERU.

Type. ♂ ad., Huambo, N. Peru, coll. Stolzmann, no. 19242, Mus. Vindob.

♂ *ad.*—Easily known from the typical form by having the rump and upper-tail-coverts of a much paler whitish-blue colour. Wing 48–50; tail 20–22; bill 7 mm. Hence the bill is rather smaller.

Four male ad. from Huambo and Guayabamba examined. I have not seen the female of this form, but probably it does not differ from that of the typical race.

9. PIPRA CÆRULEOCAPILLA.

Pipra cæruleocapilla Tschudi, Arch. Naturg. 10, i. (1844) p. 271 [Peru.—In the Faun. Peruan., Aves, p. 145, the author says that he found the species in the "Montañas" of N.W. Peru; but this is obviously erroneous, since it is only known to occur in Central and Southern Peru].

Habitat. CENTRAL PERU: Amable Maria and Soriano[1]

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[1] Tacz. P. Z. S. 1874, p. 538.

(Jelski coll.); La Gloria and La Merced[1] (Kalinowski coll.); Pozuzo, prov. Huánuco, 2400 to 2850 feet elev. (W. Hoffmanns coll., Mus. Tring). S.E. PERU: Cosnipata[2] (H. Whitely coll.); Huaynapata, Marcapata (Kalinowski coll., Mus. Vindob.); Rio Huacamayo, Carabaya, 3100 feet elev. (Ockenden coll., Mus. Tring); Cuzco, Marcapata, 3100 feet (O. Garlepp coll., Mus. v. Berlepsch and Tring).

As *typical locality* selected: CENTRAL PERU.

Type in Mus. Neuchâtel ex coll. J. J. von Tschudi.

♂ *ad.* (Pozuzo, Huánuco, Peru, April 1904; W. Hoffmanns coll.).—Uniform velvety black; top of the head beautiful Nile-blue on forehead and crown, decidedly darker cerulean blue on occiput; lower rump and upper-tail-coverts azure-blue, the bases of the feathers black. Axillaries and under-wing-coverts black. Bill black, lower mandible paler; feet black; iris red-brown (Ockenden and Hoffmanns, MS.). Wing 53½; tail 22; bill 8 mm.

♀ *ad.* (La Gloria, Centr. Peru; Mus. Branicki).—Upperparts dark grass-green; quills and tail-feathers blackish with bright green margins. Lores and sides of the head rather darker and duller green than the back. Throat, chest, and sides dull greenish, a little underlaid with yellowish; middle of breast, abdomen, axillaries, and under-wing-coverts pale yellowish. Bill and feet as in the male. Wing 54; tail 24; bill 8 mm.—Not distinguishable from the females of *P. coronata* and *P. velutina*.

There is very little variation in a good series of males. Two examples from S.E. Peru have the rump perhaps a little darker blue than those from Huánuco. I have taken the following measurements:—

	Wing. mm.	Tail. mm.	Bill. mm.
6 males from Pozuzo, Huánuco	51½–54	21–24	7–8
2 males from Marcapata	53	23, 24	7–8

10. PIPRA VELUTINA.

Pipra velutina Berlepsch, Ibis, 1883, p. 492, descr. orig. ♂ [Veragua, coll. Ribbe].

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[1] Berl. & Stolzm. P. Z. S. 1896, p. 368.

[2] Scl. P. Z. S. 1873, pp. 780, 782.

Habitat. COSTA RICA: Pozo Azul Pirris (Underwood coll., Mus. Tring); Boruca (Cherrie coll., Mus. Tring). CHIRIQUI: Volcan de Chiriqui[1] (Arcé coll.); Bugaba[1] (Arcé coll.); Divala[2] (W. W. Brown coll.). VERAGUA: Santiago de Veragua[3] (Arcé coll.). PANAMA: Lion Hill Station[4] (McLeannan coll.). W. COLOMBIA: Medellin, Remedios, Neche in Antioquia[5] (T. K. Salmon coll.); Yuntas, Rio Dagua, 1200 feet (Raap coll., Mus. Tring). N.W. ECUADOR: Cachabi[6], 200 feet (W. F. H. Rosenberg coll.), San Javier, 60 feet (G. Flemming coll., Mus. Tring, Vindob.).

Typical locality. VERAGUA.

Type in Mus. H. v. Berlepsch: ♂ ad. ex Veragua, coll. Ribbe.

♂ *ad.* (Chiriqui).—Feathers of the crown and occiput, except the blackish bases, bright ultramarine-blue; broad frontal band and whole body above and below deep velvety black. Axillaries and under-wing-coverts rather duller, more brownish black. Bill black; feet blackish brown. Iris dark red (W. F. H. Rosenberg, MS.). Wing 64; tail 27; bill 9 mm.

♀ *ad.* (Bogava, Chiriqui, Nov. 6, 1903; H. Watson coll., Mus. Tring).—Top of the head and back dark grass-green; wing- and tail-feathers dusky, outwardly margined with pale green, much paler and more yellowish than the back. Sides of the head and under-surface dull greenish, the throat underlaid with dirty greyish; middle line of abdomen and under-tail-coverts pale dirty yellowish. Axillaries and under-wing-coverts dirty greyish, sometimes narrowly margined with pale greenish yellow. Bill blackish, lower mandible yellowish grey; feet blackish brown; iris dark red (Watson, MS.). Wing 61½; tail 28; bill 9½ mm.

Adult males from different localities present no variations in colour; perhaps those from S.W. Colombia and N.W.

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[1] *P. cyaneocapilla* Salvin, P. Z. S. 1870, p. 200.

[2] *P. velutina* Bangs, Auk, xviii. (1901) p. 364.

[3] *P. cyaneocapilla* Salvin, P. Z. S. 1867, p. 149.

[4] *P. cyaneocapilla* Sclater & Salvin, P. Z. S. 1864, p. 362.

[5] *P. cyaneocapilla* iid. P. Z. S. 1879, p. 517.

[6] *P. velutina* Hartert, Nov. Zool. v. (1898) p. 488.

Ecuador have the crown a shade darker blue, but this is not quite constant. Specimens from Chiriqui and Costa Rica have large bills and rather long wings. Ten males from N.W. Ecuador and one from Yuntas, S.W. Colombia, are distinguished by their much smaller bills and considerably shorter wings. The tail is also a little shorter than in Chiriqui skins. Four adult males from Antioquia and three from Panama (*McLeannan*) are intermediate in size, but have the small bills of the southern race. Very likely the birds from south of the isthmus constitute a different form worthy of a name, but I should like to see more specimens from Panama before separating it.

The following measurements shew the differences in size very clearly :—

	Wing. mm.	Tail. mm.	Bill. mm.
♂♂ ad.			
7 : Costa Rica (Boruca, Pozo Azul Pirris) . .	62–64	26–28	9–10
10 : Chiriqui	62–64	27–29	9
3 : Panama (Lion Hill Station)	58–59½	26½–28	7–8
4 : Antioquia (Remedios, &c.)	57–59	26½–27	7½–8
1 : Rio Dagua, S.W. Colombia	56½	26	7¾
10 : N.W. Ecuador (Cachavi, S. Javier)	55½–57	25–28	7½–8
♀♀ ad.			
3 : Costa Rica (Boruca)	61½–63	27–30	10
1 : Bogava, Chiriqui	61½	28	9½
1 : Antioquia	57	27	7½
3 : N.W. Ecuador (S. Javier)	55–56	26–28	8

11. PIPRA CORONATA.

Pipra coronata Spix, Av. Bras. ii. (1825) p. 5, tab. vii. fig. 1 (♂ ad.) [" ad pagum ST. PAULI in sylvis fl. Solimoëns " : types in Mus. Monac. examined].

Pipra herbacea Spix, Av. Bras. ii. (1825) p. 6, tab. viii *a*. fig. 1 (♀) [" in sylvis fl. AMAZONUM " : spec. typ. in Mus. Monac. examined].

Pipra cyanocapilla Hahn, Vögel aus Asien, etc., Lief. xv. (1826)[1] tab. iii. fig. 2 (♂) [Brazilien].

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[1] In the Library of the Zoological Museum of Munich there is a copy of Hahn's work with the original wrappers of the livraisons preserved. On the wrapper of livraison xv. 1826 is printed as the date of issue, and Spix's name *P. coronata*, published in 1825, has therefore the priority. It

Habitat. N.W. Brazil: S. Paulo d'Olivença, R. Solimoëns (Spix coll.); Upper Rio Negro[1] (Wallace coll.); S. Pedro, Cocuy, Marabitanas and Rio Içanna: Upper Rio Negro[2] (Natterer coll.); Rio Javarri[3] (Bates coll.). N.E. Peru: Pebas[4]; Rio Tigre (Hauxwell coll., in Mus. Berlepsch); Loretoyacu[5] (Whitely coll.); Nauta (Hauxwell coll., Mus. Tring). Eastern Ecuador: Quijos[6]; Rio Napo[7]; Santiago[8] (Festa coll.); Sarayacu[9] (Buckley coll.).

Typical locality. S. Paulo d'Olivença, R. Solimoëns.

Types. Two male ad. in Zoolog. Mus. Univers. Monac.—Spix coll.

♂ *ad.* (Nauta, N.E. Peru, 17 Nov., 1883; J. Hauxwell coll.).—Forehead, crown, and occiput pale azure-blue, with the bases of the feathers blackish, this light blue cap being encircled by a narrow, darker, more ultramarine-blue border, which is scarcely indicated in the supraloral region. Whole body above and below dull brownish black with a slight violet hue, strongest on the upper-tail-coverts. Axillaries and under-wing-coverts dull brownish black. Bill blackish, lower mandible pale brownish; feet very dark horn-brown; iris red (Hauxwell, MS.). Wing 58½; tail 25; bill 8½ mm.

♀ *ad.*—Not distinguishable from that of *P. velutina.* Upper-parts dark grass-green; wings and tail-feathers dusky with light green edges; sides of the head dull greenish, lores slightly more yellowish green. Chest and sides dull greenish, throat-feathers yellowish grey with greenish tips; middle line of abdomen pale dirty yellowish. Axillaries and under-

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may be remarked that the quotation "Hahn and Küster" is not correct, since, on the titlepage (at least of livraisons i.–xvi.) Hahn alone figures as the author.

[1] Scl. & Salv. P. Z. S. 1867, p. 580.

[2] Pelzeln, Orn. Bras. ii. (1868) p. 128.

[3] Sclater, P. Z. S. 1857, p. 265.

[4] Scl. & Salv. P. Z. S. 1867, p. 978.

[5] Tacz. Orn. Pérou, ii. (1884) p. 343.

[6] Scl. P. Z. S. 1854, p. 114.

[7] Allen, Bull. Amer. Mus. N. H. ii. (1889) p. 72.

[8] Salvadori & Festa, Boll. Mus. Torino, xiv. no. 362 (1889) p. 14.

[9] Sclater, Cat. Birds Brit. Mus. xiv. (1888) p. 299.

wing-coverts dull yellowish grey. Upper mandible dark horn-brown, lower brownish white; feet dark horn-brown. Wing 56–58½; tail 28–30; bill 9 mm.

Remarks.—Adult males from the Upper Rio Negro (S. Pedro, Cocuy, Marabitanas), East Ecuador, and N.E. Peru (Nauta, Pebas) are absolutely identical. All the specimens which I have examined have the light blue cap encircled by a darker, more ultramarine-blue border. The general plumage is always dull brownish black (never deep velvety as in *P. velutina*), with a faint but distinct violet tinge on the rump and upper-tail-coverts. There is never any trace of the black forehead so conspicuous in *P. velutina*.

The female above described is from Olivença on the Amazons, the locality of *P. coronata* Spix. Two females from Marabitanas are quite similar, while two from Nauta are rather darker green on the chest. All these specimens, however, agree among themselves in having the under tail-coverts and the middle line of the abdomen very pale dirty yellowish.

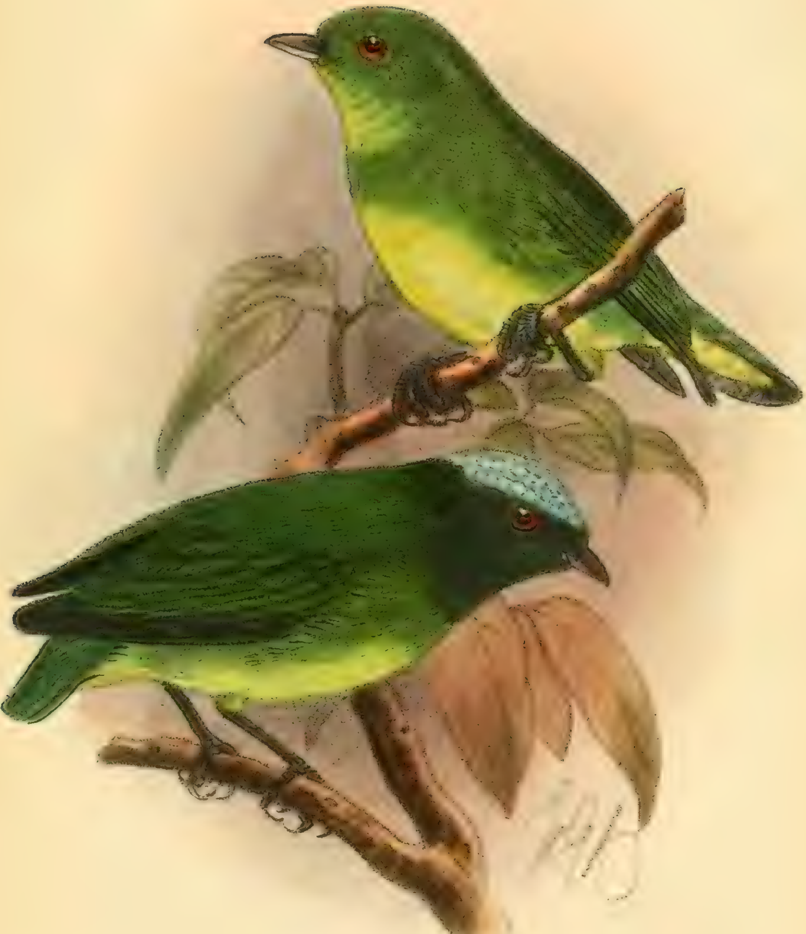
Immature males in which the black feathers are still mixed with some of the greenish feathers of the juvenile plumage differ from those in perfect adult dress in the crown being of a duller, less shining blue.

P. coronata appears to be confined to the low countries of the Upper Amazons and its northern tributaries. The most westerly point in Peru whence I have seen specimens is Nauta. In the British Museum there is one ♂ ad. said to be from the "Upper Ucayali," but it has no collector's label, and I strongly doubt the correctness of the locality.

Measurements.

	Wing. mm.	Tail. mm.	Bill. mm.
♂ ♂ ad.			
5: Rio Negro (*Natterer*)	59–60	26½–30	8–9
4: N.E. Peru (Nauta, Rio Tigre)	58–60	25–27	8–8½
2: East Ecuador	58½, 60	28, 29	8½
♀ ♀.			
2: Rio Negro (*Natterer*)	57, 58½	30	9
1: Olivença, Amazons (Hahnel coll.)	56	29	9½
4: Nauta, Rio Tigre	56½–59	28–29	9

Ibis 1906. Pl. I.



J. [illegible] [illegible]

PIPRA EXQUISITA.

12. PIPRA EXQUISITA. (Plate I.)

Pipra exquisita Hellmayr, Bull. Brit. Orn. Cl. xv. p. 56 (March 1905), descr. orig. ♂ ♀ [Chuchurras, Centr. Peru].

Habitat. CENTRAL PERU: Chuchurras, Prov. Huánuco, 1260 feet (W. Hoffmanns coll.). W. BRAZIL: Rio Purús, at the mouth of the Rio Acré (in Mus. Pará, *fide* Goeldi).

Typical locality. CHUCHURRAS, CENTR. PERU.

Type in Mus. Tring: "♂" ad. Chuchurras, July 1904; coll. Hoffmanns.

♂ *ad.* (Chuchurras, Peru, July 1904; W. Hoffmanns coll.: type of the species).—A narrow frontal band, lores, supraorbital region, and whole back dark green (between bottle- and grass-green of Ridgway's Nomencl. pl. x.). Crown and occiput beautiful turquoise-blue, the base of the feathers being dark green. Wing-coverts, quills, and tail-feathers blackish, dark green like the back on the outer webs. Cheeks, ear-coverts, and throat rather darker green; foreneck and sides of breast green like the back; middle of breast, abdomen, and under-tail-coverts bright clear yellow. Axillaries and under-wing-coverts dirty grey, with more yellowish margins. Bill blackish, lower mandible dirty whitish; feet dark horn-brown; iris "dark red" (W. Hoffmanns, MS.). Wing 59½; tail 28; bill 8 mm.

Two other males, same date and locality, agree in every respect with the type. Their measurements are:—Wing 59, 58; tail 26½, 27; bill 7½, 8 mm.

♀ *ad.* (Chuchurras, Peru, July 1904; W. Hoffmanns coll.).—Whole upper-parts, including crown and occiput, uniform grass-green, rather lighter than in the male. Wings and tail as in the latter. Lores yellowish green; a narrow rim round the eye pale yellowish; cheeks and ear-coverts dull greenish. Throat-feathers pale yellowish with dull greenish tips; across the chest a well-defined bright green band, which is continued along the sides of the breast; middle of the breast, abdomen, and under-tail-coverts bright clear yellow. Axillaries and under-wing-coverts more yellowish than in the male*. Bill and feet as in the latter; iris "brown-red," according to the collector. Wing 56; tail 27 mm.

In the original description I compared the species with *P. opalizans*; but a close examination proves beyond doubt that, notwithstanding its green plumage, it clearly belongs to the section of *P. coronata*. The bill is of the same form, with the upper mandible blackish; the feet are dark horn-brown and the iris red. On the other hand, *P. opalizans*, *P. nattereri*, and *P. gracilis* form a natural group, characterized by the flesh-coloured feet, white iris, and pale yellow margins to the inner webs of the remiges.

The female of *P. exquisita* stands somewhat between the two groups, having the dark brown feet and the bill of *P. coronata*, and the bright yellow abdomen of *P. opalizans* and its allies. From the type of *P. gracilis* it differs at a glance by the broad dark green jugular band, the dark brown feet, and the lack of the yellow inner margins to the remiges.

Dr. Goeldi has lately shown me some skins of this bird obtained on the Upper Rio Purús, in West Brazil, near the Bolivian frontier. They appear to be perfectly similar to the types from Peru.

In the British Museum there are two specimens obtained by Bartlett near Chyavetas and on the Rio Huallaga, Eastern Peru. They have the crown a shade darker sky-blue than the typical examples from Chuchurras, and encircled by a narrow azure-blue border as in *P. coronata*. The yellow on the lower parts is not quite so extensive, and the throat is rather darker green. An evidently young male from the Rio Juruá (Mus. H. v. Berlepsch) agrees with them in the colour of the under-parts, but the crown is of a uniform dull ultramarine-blue.

It must remain an open question whether the birds from the Huallaga, Ucayali, and Juruá constitute a race different from *P. exquisita* or not. Anyhow, a skin in

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* There is a misprint in the original description (*op. cit.* p. 57) as regards the differences between *P. exquisita* ♀ and *P. gracilis*. It should read: "in having . . . *no* pale yellow edges to the inner webs of the remiges."

Count Berlepsch's collection proves beyond doubt that young males have the crown duller and of a less shining blue than the adults. Consequently, the specimens from Chyavetas and Rio Huallaga cannot be young males of *P. coronata,* as considered by Sclater and Salvin.

The following references pertain to this doubtful form:—

Pipra cyaneocapilla (nec Hahn!) Scl. & Salvin, P. Z. S. 1866, p. 190 [Upper Ucayali]; iid. l. c. 1867, p. 751 [Chyavetas]; Ihering, Revist. Mus. Paul. vi. (1905) p. 435 [Rio Juruá, W. Brazil].

The measurements of the three specimens examined by me are as follows:—

	Wing.	Tail.	Bill.
	mm.	mm.	mm.
1. Mus. Brit., "♂": Chyavetas, E. Peru, July 1866 (E. Bartlett coll.)	56½	27	9
2. Mus. Brit., (♂) ad.: Huallaga (E. Bartlett coll.)	60	28	8
3. Mus. Berlepsch, "♂" juv.: Rio Juruá, August 1902 (E. Garbe coll. no. 3679: "iris red-brown")	61½	30½	8

13. PIPRA SUAVISSIMA.

Pipra suavissima Salvin & Godman, Ibis, 1882, p. 79, tab. i. ["Guiana Brit. in montibus 'Merumé' dictis, et Bartica Grove"].

Pipra serena (nec Linnæus!) Cabanis in Schomburgk, Reise Brit. Guiana, iii. (1848) p. 697 [Roraima].

Habitat. BRITISH GUIANA: Bartica Grove, Merumé Mountains, R. Attapurow[1], Quonja, Roraima[1] (Whitely coll.), Roraima (Schomburgk), Essequibo River and Upper Mazaruni R. (Mus. Tring).

Typical locality. MERUMÉ MTS.

Types. ♂♂ and ♀♀, Merumé Mts., in Mus. Brit. ex coll. Salvin-Godman.

♂ *ad.* (Upper Mazaruni River; Mus. Tring).—Forehead and anterior part of crown covered with lamelliform, milky-white feathers, their extreme base only being blackish. This white patch reaches as far back as the posterior margin of the eye, and ends in a very narrow pale Nile-blue border. Hind crown, back, narrow frontal band, sides of the head, throat, breast, sides of body, as well as wings and tail, deep velvety black; rump and upper-tail-coverts turquoise-blue, the concealed basal portion of the feathers black; whole abdomen beautiful orange, passing into pale yellow on the anal region; under-tail-coverts dark olive, some with dull orange tips. Axillaries and under-wing-coverts black. Bill black; feet blackish brown.

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[1] Salvin, Ibis, 1885, p. 300.

Ten males measure:—Wing 55–59; tail 25–30; bill 9 mm.

♀ *ad.* (Roraima, 19 Nov. 1885; H. Whitely, jr., coll.).—Forehead and anterior part of the crown (occupied in the male by the milky-white patch) dull pale bluish; hind crown and whole back bright grass-green. Wing-coverts, quills, and tail-feathers dusky, with green margins, rather paler than the back. Lores dirty yellowish, a narrow rim round the eye rather purer; sides of head and neck, fore-neck, and sides of body dull green; throat mixed with pale yellowish; middle of breast and abdomen, including under-tail-coverts, bright yellow. Axillaries and under-wing-coverts pale yellowish. Bill and feet dark horn-brown.

Four females measure:—Wing 58–59; tail 29–30; bill 9 mm.

There is very little variation amongst the specimens before me. One ♂ ad. has a few dark orange feathers on the middle of the fore-neck, an indication of the yellow patch so prominent in *P. serena*. The female resembles very closely that of *P. nattereri*, but is at once known by having the bluish tinge confined to the anterior portion of the crown.

14. Pipra serena.

Pipra serena Linnæus, Syst. Nat. xii. tom. i. (1766) p. 340 [based on Brisson's "Manakin à front blanc," Ornith. iv. p. 457: Cayenne[1]].

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[1] Linnæus says "Habitat in Cayana, Surinamo," but he quotes only Brisson, who expressly states "On le trouve à Cayenne." So far as I know, the species has not yet been obtained in Surinam.

Habitat. Known only from CAYENNE* (specim. in various collections: Mus. Brit., Vindob., Tring, H. v. Berlepsch, &c.).

♂ *ad.* (Cayenne: Mus. Tring).—Forehead milky white, bordered posteriorly by a slight pale bluish line; whole crown, sides of the head, back, wings, tail, throat, and breast velvety black; rump and upper-tail-coverts cerulean blue, the base of the feathers black. Whole abdomen, under-tail-coverts, and a small patch in the middle of the fore-neck bright clear yellow. Axillaries and under-wing-coverts black. Bill black, lower mandible more brownish; feet dark horn-coloured.

Four males measure:—Wing 51–53; tail 26–28; bill 8½–9 mm.

♀ *ad.* (Cayenne; collected by G. K. Cherrie: Mus. Tring).—Exactly like that of *P. suavissima*, but readily distinguishable by having the forehead and crown bright grass-green like the back. Wing 53; tail 27; bill 9 mm.

The male differs from *P. suavissima* in the following points:—The white patch on the head is confined to the forehead; the abdomen and *under-tail-coverts* are clear yellow; the blue of the rump is decidedly darker. Besides, there is a distinct yellow spot on the fore-neck, not to be seen in the species of British Guiana.

15. PIPRA GRACILIS.

Pipra gracilis Hellmayr, Verhandl. zool.-bot. Gesellsch. Wien, 1903, p. 202 [Engenho do Gama, Matto Grosso].

Pipra nattereri Pelzeln, Zur Orn. Brasil. ii. (1868) p. 127 [part.; ♀ ex Engenho do Gama].

Habitat. W. BRAZIL, MATTOGROSSO: Engenho do Gama, R. Guaporé (Natterer coll.).

Typical locality. ENGENHO DO GAMA.

Type in Mus. Vindob., no. 15845, "♀" ad. "Eng. do Gama, 10 August, 1826": Natterer coll.

Whole upper surface light grass-green; upper-wing-coverts, wing- and tail-feathers dusky, bright grass-green on the outer webs. Lores and sides of the head rather duller greenish than the back. Under-parts bright clear yellow, throat, fore-neck, and sides of breast but slightly suffused with greenish; axillaries and under-wing-coverts pale yellow; inner webs of remiges very distinctly margined with yellowish white. Bill horn-brown, lower mandible and extreme tip of the maxilla whitish; feet flesh-coloured; iris dirty white (Natterer, MS.). Wing 52; tail 27; bill 9 mm.

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* *Dasyncetopa serena* Bonaparte, Bull. Soc. Linn. Normandie (Caen), ii. (1857) p. 37.

This specimen is apparently the female of what will doubtless prove to be a brilliant species of *Pipra*. In general colour it resembles the female of *P. nattereri*, having the bill of the same shape, size, and colour, and the feet flesh-coloured, but is seen to differ at once in its green (not bluish) pileum, and less greenish suffusion on the throat and fore-neck. From *P. serena* ♀ it is easily recognisable by its flesh-coloured feet, from that of *P. opalizans* by its much smaller and darker bill, much less greenish throat and chest, and lighter green back.

16. Pipra nattereri.

Pipra nattereri Sclater, P. Z. S. 1864, p. 611, tab. 39, descr. orig. ♂ ♀ [Borba, Rio Madeira]; Pelzeln, Zur Ornith. Brasil. ii. (1868) p. 127 [pt., Borba].

Habitat. North Brazil: Borba, Rio Madeira (Natterer coll.).

Type. ♂ ad., Borba, coll. Natterer, in Mus. Vindob.

♂ *ad.* (Mus. Vindob., Borba, Rio Madeira, January 1830; Natterer coll.: type of species).—Top of the head and nape as well as the rump and upper tail-coverts beautiful white, slightly opalizant, the white cap bordered below by a narrow pale bluish line beginning from the eye and reaching to the sides of the nape. Whole back and outer margins of the upper-wing-coverts, quills, and tail-feathers bright grass-green; inner webs of wing- and tail-feathers dusky. Sides of the head and neck dull greenish. Under-surface bright clear yellow, chin and throat washed with greenish. Axillaries and under-wing-coverts yellowish white; along the inner webs of the quills a narrow yellowish-white margin. "Iris dirty white; culmen greyish black, lower mandible pale bluish grey; feet pale yellowish brown" (Natterer, MS.). In the dried skin the upper mandible is blackish, the lower whitish, the feet flesh-coloured. Wing 50; tail 28; bill 9 mm.

♀ *ad.* (Mus. Vindob., Borba, February 9, 1830; Natterer coll.).—Pileum dull bluish; whole back bright grass-green, the uropygial feathers with a slight bluish hue. Wing- and tail-feathers dusky, exteriorly margined with yellowish green. Sides of head and neck, throat, and chest dull greenish, rest of under-parts clear yellow. Axillaries and under-wing-coverts pale yellow. Upper mandible greyish black, lower jaw bluish grey; feet pale yellowish grey. Wing 51; tail 27–28; bill 9 mm.

The four specimens of this magnificent bird collected by Natterer are still the only examples known.

17. PIPRA OPALIZANS.

Pipra opalizans Pelzeln, Zur Orn. Brasil. ii. (1868) pp. 128, 186, descr. orig. ♂ [Pará]; Berlepsch, Ibis, 1898, p. 60, tab. ii. (♂ ad.) [Ourém, Rio Guamá]; Hellmayr, Verhandl. zool.-bot. Gesellsch. Wien, 1903, p. 201, descr. ♀ [Bemavides]; id. Nov. Zool. xii. 1905, p. 294.

Habitat. Environs of PARÁ, N. BRAZIL: Pará (Natterer coll.); Ourém on the Rio Guamá (W. A. Schulz coll.); Bemavides (Steere coll.); Igarapé-Assú (A. Robert coll., Mus. Tring).

Typical locality. PARÁ.

Type lost.

♂ *ad.* (No. 2115, A. Robert coll., Igarapé-Assú, Pará, April 19, 1904: Mus. Tring).—"Top of the head ornamented by a plaque composed of flat metallic feathers of unsurpassed beauty. They might be classed as being like mother-of-pearl with a glittering hue of opal, but at the same time may be observed a rich coruscation on it of the purest gold and silver" *. Back bright grass-green, as are also the wing-coverts, the outer webs of the quills, and the tail-feathers. Inner webs of remiges and rectrices dusky except the central pair of the latter, which are uniform green, a little paler than the back. A narrow frontal band, superciliaries, sides of the head, throat, chest, and sides of the body paler and duller greenish than the upper-parts; middle of breast, abdomen, and under-tail-coverts bright clear yellow. Axillaries and under-wing-coverts rather paler yellow, along the inner webs of the quills a distinct yellowish white margin. Bill (in dried skin) whitish, base of upper mandible plumbeous; feet flesh-coloured; iris silvery white (Robert, MS.). Wing 53; tail 26½; bill 10 mm.

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* I use the words of Count Berlepsch, as they describe the peculiar colour of the head in the most exact manner.

♀ *ad.* (Bemavides, near Pará, 28th July; J. B. Steere coll.: Mus. Tring).—Whole upper surface, including the head above, bright green; wings and tail as in the male. Sides of the head, throat, chest, and sides of the body rather duller greenish; middle of breast, abdomen, and under-tail-coverts bright yellow. Axillaries and under-wing-coverts paler yellow, quills with a distinct yellowish white inner margin as in the male. Bill and feet as in the latter.

The two females collected by Mr. A. Robert differ from that above described in having the upper mandible pale brown. Iris marked in one specimen (no. 2038) as "yellowish white," in another "brown" (A. Robert, MS.). Wing 53½–54; tail 26–29; bill 10 mm.*

P. opalizans has a much broader and larger bill than its nearest ally *P. nattereri*, with the culmen more strongly curved.

18. Pipra virescens.

Pipra virescens Pelzeln, Zur Orn. Bras. ii. (1868) pp. 128, 187, descr. orig. [part., descr. ♂ (nec ♀!).—Barra do Rio Negro].

Tyranneutes brachyurus Sclater & Salvin, Ibis, 1881, p. 269, descr. orig. [Bartica Grove, Brit. Guiana].

Pipra virescens Salvin & Godman, Ibis, 1883, p. 208 (crit.); Salvin, Ibis, 1885, p. 300 [Camacusa, Brit. Guiana].

Pipra virescens subsp. *brachyura* Sclater, Cat. Birds Brit. Mus. xiv. (1888) p. 303 [Brit. Guiana].

Habitat. North Brazil, Lower Amazonia: Barra do Rio Negro (Natterer coll.). British Guiana: Bartica Grove, Camacusa, R. Carimang (H. Whitely coll.).

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* Three specimens measured.

Typical locality. Barra do Rio Negro (Manáos), Lower Amazons.

Type. No. 15155, Mus. Vindob., "♂" ad., Barra do Rio Negro, 3 October, 1830: coll. Natterer.

"♂" ad. (type of species: Mus. Vindob.).—Upper surface pale olive-green; crown bright lemon-yellow, the extreme tips of the feathers only being green. Wing-coverts, quills, and tail-feathers dusky, externally margined with the colour of the back. Sides of the head and neck dull greenish. Under-parts pale yellowish, fore-neck and sides shaded with pale greenish; axillaries and under-wing-coverts pale yellowish. Upper mandible and tip of the lower blackish brown, base of the latter whitish.

♀ *ad.*—Exactly like the male in colour and structure.

This species is at once recognisable by the peculiar shape of the two outer rectrices. *The outermost pair is very narrow and about* 10 *mm. shorter than the longest, with the shaft much stiffened.* The next pair agrees in the latter respect, but is rather broader and much longer, being only about 2 mm. less than the middle tail-feathers. This striking character, which has been overlooked hitherto, is quite constant in eleven specimens and is common to both sexes.

Ten adults (of both sexes) from British Guiana agree with the type in having a large yellow vertical spot, and differ only by the slightly longer tail and larger bill. Some of them have the crown-patch rather smaller and of a darker, more golden yellow, but others are exactly like the type. Sometimes there are faint traces of pale greyish shaft-lines on the throat.

Measurements.

		Wing. mm.	Tail. mm.	Bill. mm.
1. ♂ ad.	Barra do Rio Negro. (Type of species.)	47	19	9
2, 3. ♂ ♂.	Camacusa, Brit. Guiana	50, 50½	20	9½, 10
4, 5. ♀ ♀.	Camacusa, „	50	23, 24	9½, 10
6. ♂ ad.	Rio Carimang, „	51	21½	9½
7. ♂ ad.	Bartica Grove, „	47	22½	9½
8, 9. ♀ ♀.	„ „ (Type of *Tyranneutes brachyurus* Scl. & Salv.)	48, 50½	22, 23	9½–10

19. Pipra stolzmanni*, sp. nov.

Pipra virescens (nec Pelzeln!) Pelzeln, Zur Orn. Brasil. ii. (1868) pp. 128, 187 [part.: "♀ et mas junior."—Borba, Marabitanas].

Pipra sp. ign. Sclater & Salvin, P. Z. S. 1867, p. 751 [Xeberos, Chyavetas, N.E. Peru].

Pipra virescens (nec Pelzeln!) Sclater & Salvin, P. Z. S. 1873, p. 283 [Xeberos, Chyavetas, Chamicuros]; Taczanowski, P. Z. S. 1882, p. 23 [Yurimaguas, N.E. Peru]; id. Ornith. Pérou, ii. (1884) p. 345 [Yurimaguas]; Salvadori & Festa, Boll. Mus. Torino, xiv. no. 362 (1899) p. 14 [Santiago, East Ecuador]; Berlepsch & Hartert, Nov. Zool. ix. (1902) p. 53 [Nericagua: Orinoco; Suapure: Caura R., Venezuela].

Pipra virescens "subsp. *typica*" Sclater, Cat. Birds Brit. Mus. xiv. (1888) p. 302 [Rio Negro, East Peru, East Ecuador, Bogotá].

Habitat. North Brazil, Upper Rio Negro: Marabitanas; Borba on the Rio Madeira (Natterer coll.). Eastern Peru: Yurimaguas (Stolzmann coll.); Xeberos, Chyavetas, Chamicuros (Bartlett coll.). Eastern Ecuador: Santiago (Festa coll.); Sarayaçu (Buckley coll.). Venezuela: Nericagua, on the Upper Orinoco R. (G. K. Cherrie coll.); Suapure on the Caura, a southern tributary of the Orinoco (Klages coll.). Colombia: Bogotá coll. (trade-collections: many specimens in Mus. Berlepsch, Tring, Munich, &c.).

Typical locality. Marabitanas, Upper Rio Negro, N.W. Brazil.

Type in Mus. Vindob., no. 15157, "♂" ad., "Marabitanas, 16 March, 1831": Natterer coll.

♂ *ad.* (type of species).—Similar to *P. virescens*, but without the yellow vertical spot and with a quite differently shaped tail. The outer rectrices are by no means narrowed or stiffened, but of the same shape as the others. The outermost pair is fully as long as the central; the second slightly shortened, being from two to four millimetres less than the first and third.

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* Named in honour of Dr. Jean Stolzmann, of the Branicki Museum, Warsaw, who first suggested to me the distinctness of the species.

♀ *ad.*—Exactly like the male in colour and structure.

I have before me twenty-four specimens from the Upper Rio Negro, Orinoco, Caura, N.E. Peru, East Ecuador, and from Bogotá collections. Not one of them has the yellow vertical spot which is always present in *P. virescens,* but in some specimens there are a few very small pale yellowish dots on the forehead or anterior part of the crown, only to be seen when the feathers are raised. In two Bogotá skins and one " ♀ " from Borba (Natterer coll.) the two outer tail-feathers are equal and about two millimetres shorter than the remainder; in all the other specimens the outermost rectrix is quite as long as the third, while the second is from two to four millimetres shorter—just as described above. Sexed males and females are quite alike in this character. It is strange that this peculiarity should not have been noticed before.

Three examples collected by Natterer at Marabitanas and Borba, which were considered by Pelzeln to be the ♀ and ♂ juv. of his *P. virescens* with a yellow crown-patch, agree in every respect with the large series from Peru, Ecuador, Venezuela, and Bogotá. I can see no difference between specimens from different localities either in size or colour.

Although *P. virescens* and *P. stolzmanni* are evidently geographical representatives, the difference in the form of the tail is so striking that I do not feel justified in using trinomials.

Measurements.

	Wing. mm.	Tail. mm.	Bill. mm.
Mus. Vindob.			
1. "♂" ad. Marabitanas, Rio Negro. (Type of species.)	49	21	10
2. "♀." Borba, Rio Madeira, Feb. 7, 1820. Natterer coll.	49½	25	9¾
Mus. Brit.			
3. "♂" ad. Marabitanas, March 16, 1831. Natterer coll.	47	21½	9
4. "♀." Xeberos, N.E. Peru, June 2, 1866. E. Bartlett coll.	48	26	10⅓
5. "♂." Chamicuros, N.E. Peru, May 3, 1867. E. Bartlett coll.	48	27	9½
6. "♀." Chyavetas, N.E. Peru, July 16, 1866. E. Bartlett coll.	49	23	10

	Wing. mm.	Tail. mm.	Bill. mm.
Mus. Brit.			
7. "♂." Chamicuros, N.E. Peru, June 3, 1867. E. Bartlett coll.	49	22	9½
8. —. Xeberos, N.E. Peru. E. Bartlett coll.	48	24	8¾
9. —. Sarayaçu, E. Ecuador, C. Buckley coll.	49	22	10
10. —. ” ” ”	52	26	11
Mus. Branicki.			
11. "♂" ad. Yurimaguas, N.E. Peru, Feb. 28, 1881. Stolzmann coll.	49	21	11
Mus. Tring.			
12. "♂" juv. Nericagua, Orinoco, Apr. 7, 1899. Cherrie coll.	48	22	9
13. "♀" ad. Nericagua, Orinoco, Apr. 7, 1899. Cherrie coll.	47½	24	10
14. "♂" ad. Suapure, Caura R., Apr. 5, 1900. S. Klages coll.	50½	24½	9
15. Native Bogotá collections	50	27	9⅓
16. ” ” ”	50	28	10
17. ” ” ”	50½	23	10
18. ” ” ”	51	25	10
19. ” ” ”	51	23	10
20. ” ” ”	48	23	(Damaged.)

II.—*Ostrich-farming in South Africa.*

By the Hon. Arthur Douglas[*].

The domestication and farming of Ostriches for the production of feathers was first commenced in South Africa in 1867. Previously to that date no Ostrich had ever been bred or reared there in a tame state, though a few captured wild birds had been kept in confinement in Zoological Gardens. The idea was universal that the Ostrich would not make a nest and sit in captivity; hence the first efforts at hatching and rearing were made with incubators, and this system was brought to very great perfection, ninety per cent. and upwards of the eggs put into the incubators being hatched. This method was largely pursued for many years.

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[*] [This paper was read in Section D at the Meeting of the British Association at Cape Town, August 17th, 1905, and was kindly communicated to us by the Author, who, we much regret to hear, has since died.—Edd.]

Previously to 1867 the world's supply of Ostrich-feathers was obtained by the destruction of wild birds, and this destruction was proceeding at such a pace that, had it not been for successful domestication, the Ostrich would ere this have probably been nearly extinct in the Colony.

Ostrich-farming is practically confined to the Cape Colony. It only exists to a very limited extent in the other Colonies of South Africa. Efforts have been made to start it in Egypt, New Zealand, Australasia, South America, and California, but with very doubtful success; whilst in the Cape Colony it has been a continuous success from the first.

In 1880 the Colony's export of Ostrich-feathers was 163,065 lbs., about one-eighth of which was from wild birds. In 1904 the export was 470,381 lbs., practically the whole of which was from tame birds. The census of 1891 gave 154,880 as the number of tame birds in the Colony, whilst the census of 1904 gave 357,970; so that in the last twelve years the figures have more than doubled. This rapid increase has been mainly due to the remarkable freedom from disease that the Ostrich has shown under domestication, whilst all other stock in South Africa has suffered terribly from diseases produced by the "stock-scourge."

As yet, the Ostrich, when farmed in favourable environment, has only shown a susceptibility to five diseases. These are:—

1. *Strongylus douglasi*: by far the most fatal of all. This is caused by a thread-worm adhering in great numbers to the gastric glands, and killing its host by totally destroying its powers of digestion. It was first observed in 1879. No cure has been found, and it is very fatal to large numbers of birds when their environment is unsuitable.

2. "Yellow liver": an infectious fever, prevalent in chicks up to four months old, and often fatal when they are overcrowded or exposed to excessive moisture.

3. "Tape-worms": now nearly always found in large numbers in all Ostriches up to two years old. This disease is easily kept under by regular fortnightly dosing with turpentine, and is only fatal if neglected or when in conjunction with *Strongylus douglasi.*

4. "Ostrich-fly": a disease that came from the north about twenty years ago; it is becoming worse, and may yet be very serious. The fly is easily killed by spraying the birds with water and five per cent. of paraffin mechanically mixed, or by dipping the birds in a decoction of nicotine; but the life-history of the fly is not known, and it soon reappears again.

5. Lice, which are found in myriads on neglected birds; they injure the feathers and reduce the condition of the hosts. They are easily destroyed by spraying or dipping.

There are now two well-defined methods of Ostrich-farming: the one by grazing the birds on fields of lucerne under irrigation, when five of them can be kept to the acre; the other by letting them find their own food in large camps of three thousand acres and upwards in size, allowing from ten to twenty acres for each bird.

In the former case the drawback is the great cost of land laid down with lucerne and under permanent irrigation; it varies from £50 to £100 per acre. In the latter plan the objections are the greater loss of birds from accidents and straying, and the cost of feeding them in very severe droughts.

Oudtshoorn is the principal seat of the Ostrich-industry on irrigated land, one-quarter of all the tame birds being found there. The second method is mainly adopted on the coast west of East London, and up the large river-valleys to an altitude not exceeding 3000 feet above sea-level.

The feathers of the chicks are usually pulled when the birds are eight months old; then, six and a half months afterwards, the primary feathers are cut, and the tails (blacks and drabs) pulled; two months later the quills of the cut feathers are pulled. This gives nearly three pluckings in two years. Birds should average from 1 lb. to 1 lb. 3 oz. of feathers at each plucking, or about 1½ lbs. a year.

The census taken in April 1904 gave 357,970 birds in the Colony, whilst the export of feathers for the year was only 470,381 lbs., equal to 1⅓ lbs. per bird; but as from the total number of birds must be deducted those that die during the year and those which have not arrived at full feather-producing age, the production was fully 1½ lbs. per adult bird per annum.

The value of feathers exported in 1904 was £1,058,988, giving £2 19*s.* 6*d.* per bird including chicks, or about £3 10*s.* 0*d.* per bird of feather-producing age. The greatest weight of feathers per bird was produced where irrigation was used and in districts where the veldt was soft. The least weight was obtained on the hard Karoo and at high altitudes. Birds of very superior quality are now being bred, no price being thought excessive for good birds for breeding purposes. As much as £1000 was lately given for a pair, and from £200 to £300 is not so very uncommon, whilst the price of ordinary birds is from £5 to £10 each, and of chicks from £2 to £4.

I have mentioned that in the early years of Ostrich-farming artificial hatching was very extensively practised. This was owing to the great demand for birds and to the very limited number in South Africa old enough to breed, namely, of four years in age. Every effort was made to get the greatest possible increase, and this was obtained by feeding the old birds heavily and not allowing them to sit. Thus they kept on laying all the year round. But as the number of old birds increased and the value of chicks decreased this method became less profitable. Moreover a great tendency to "yellow-liver" sickness was shown when excessive numbers of chicks were reared by hand on one homestead, and now the practice of artificial hatching has been quite abandoned, and the hatching and rearing is done entirely by the parents. The birds begin nesting in July, and lay from twelve to sixteen eggs each, which are hatched in six weeks, the hen sitting by day and the cock by night, excepting in wet weather, when the cock sits day and night.

One of the difficulties of the Ostrich-farmer, especially when letting his birds graze in large camps on the natural veldt, is their tendency to get wild and unmanageable. This tendency is not so bad as it was in the early days, but whether the innate wildness and fear of man has been lessened by the domestication of the parents for several generations is very doubtful. If half a nest of eggs from tame birds were put into a wild Ostrich's nest, I do not think that there would be the slightest difference in the chicks when they were hatched as regards wildness. When first a brood of chicks is approached, and the parent birds give the note of alarm, the nestlings run and drop flat in any little depression they find in the ground. When picked up they remain limp and sham being dead, in exactly the same way as wild chicks do. But as soon as the parent birds allow a man to approach them, and begin feeding round him, the chicks quickly imitate their parents and in a few hours shew no more fear of man than they do. If a lot of chicks is taken straight away before they have left the nest, and put along with another lot of chicks, they will all be just as wild or tame as the foster-parents are—no matter how wild their real parents may have been.

The hen when sitting is perfectly tame and harmless, but as soon as the chicks are hatched she becomes very fierce. I once had a curious instance of this change in the hen. Some men were working at a fence close to a sitting hen Ostrich. She paid no attention to them till one day she sprang from her eggs and knocked one of the men down, very severely injuring him. On examining the nest, I found in one egg a chick which squeaked; and this had, no doubt, caused the sudden change of behaviour in the hen. The cock bird is always savage during the period of incubation, and will fight furiously to keep men away from the nest. When once you are at the nest and begin handling the eggs he ceases to fight, and adopts a piteous supplicating attitude, as though he were beseeching you not to break the eggs;

but directly you put them down and begin retreating from the nest, he fights worse than before.

The process of sexual selection, by which the stamina of the bird and the beauty of its feathers are kept up, is very marked in the Ostrich. As the breeding-season comes on, the cock begins to disport himself before the hens. Dropping on his haunches, he distends his wings like two huge fans, and rolling his head from side to side makes every feather quiver. Then, jumping up, he utters three bellows that much resemble the roar of a lion, as a challenge to any other cock to come and fight; this he continues for some days, till a hen accepts him and they pair off. The breeder, by careful selection and by keeping pairs together, can manage affairs more quickly. At the same time he is met by considerable difficulties. A cock and a hen, both superior birds and obtained from well-established strains, may be mated, and yet the resulting chicks may be very disappointing, while it may be years before a consort for either parent is found to produce satisfactory chicks. When a pair are satisfactorily mated, the strain is easily maintained by inbreeding; but the usual consequences of inbreeding—weak constitution and barrenness, or chicks difficult to rear—soon become manifest.

In 1880, with an annual production of 163,065 lbs. weight, the export value of Ostrich-feathers per lb. was £5 8*s*. 4*d*.; in 1904, twenty-four years later, the production was 470,381 lbs., with a declared export value of £2 5*s*. 0*d*. per lb.; so that in twenty-four years the production had increased nearly threefold, and the price had fallen to nearly one-third. In fact, it seemed as if further increased production would be followed by a corresponding fall in value. But this will not necessarily be so, as during the last twelve years, although the production has been steadily increasing, the value of feathers per lb. has remained much the same. Thus it looks as though the world's increased demand were able to absorb the present rate of increased supply, and it is doubtful if South Africa is capable of increasing the production at the same rate as in the past twelve years. The best of the country for Ostrich-farming—that is, where the rainfall is not over 20 inches, with a rich soil, shelter from high winds, and no extremes of temperature—is now pretty fully stocked, and further increase must come from parts not so well adapted to the industry or from more land being put under irrigation and lucerne. Still the difficulties are such that this area can only be extended very slowly. It would therefore seem that, so far as the capabilities of South Africa go, the rate of increased production is not likely to exceed the requirements of the trade. With the superior feathers now beginning to be produced, it is probable that the trade will demand the better and neglect the inferior feathers; and as the Cape Government exacts an export duty of £100 a bird, the superior birds will be found only in South Africa. There are also great difficulties to be overcome in starting the industry successfully in other countries. We have seen that the birds during the breeding-season are very fierce and dangerous, and it is difficult to get labourers not used to the work to have anything to do with them. Besides which there are few industries in which skill and knowledge in selecting the birds have so much to do with the success of the undertaking. Not only to establish a troop of Ostriches but to maintain it up to a good standard requires the constant weeding-out of inferior birds; and in a new country, with no removal of the less fit, the birds would rapidly deteriorate.

It may be said that all these difficulties had to be overcome in the Cape Colony. But it should be recollected that for the first few years after the industry was started the birds produced feathers at each plucking of from £10 to £12 in value, so that costly mistakes could be more easily borne; but now, with pluckings averaging £3 for a bird, mistakes would make the business a loss. So we may presume that there will not be any sudden or large production in other countries, and that this industry will continue to be very lucrative in the Colony for many years.

III.—*Remarks on the Names of some Australian Birds.*

By Alfred J. North, C.M.B.O.U., C.M.Z.S.

Amongst the Australian Cuckoos the name *Cuculus flabelliformis* of Latham appears to have been erroneously applied by writers in general. This name (Ind. Orn. Suppl. ii. p. xxx) was founded upon the "Fan-tailed Cuckow" of the 'General Synopsis of Birds' (Suppl. ii. p. 138). Latham's description of the tail of the latter is as follows:—"The tail is greatly cuneiform, the two middle feathers black; the others the same on the outer webs, but barred on the inner with alternate black and white." Latham's figure, too, on plate cxxvi. agrees with his description, shewing that the outer webs of the outermost feather on both sides—the only feathers with the outer webs visible—are unbarred, and that the inner webs are only toothed or notched about halfway across, and not barred right across to the shaft. The description and figure, therefore, clearly do not apply to the *Cacomantis flabelliformis* of the 'Catalogue of Birds in the British Museum' (xix. p. 266) and of writers in general. A very good figure of the bird to which Latham's name has been applied in the latter work appears in Gould's folio edition of the 'Birds of Australia' (iv. pl. lxxxvi.) under Vigors and Horsfield's name of *Cuculus cineraceus*, for which apparently the specific name of *rufulus* of Vieillot will have to stand. I am unable, however, to verify his reference. Gould's *Cuculus insperatus* is synonymous with the true *C. flabelliformis* of Latham. In the 'Catalogue of Birds in the British Museum' (xix. p. 273) Captain Shelley, instead of placing Gould's name of *Cuculus insperatus* as a synonym of *Cacomantis variolosus*, as he has done with his *C. dumetorum*, allows it to stand for an exclusively extra-Australian species which inhabits New Guinea, New Britain, the Solomon and Aru Islands, and some of the Moluccas. The name cannot, however, be used for a species inhabiting these islands, for it was founded on an Australian specimen procured by Gould himself in the Liverpool Range, New South Wales, on the 29th of October,

1839. The type of *Cacomantis variolosus* (Vigors and Horsfield) was obtained by Caley at Parramatta in the same State. The species figured by Gould under the name of *Cuculus insperatus* (which appears to be the true *C. flabelliformis* of Latham) is fairly numerous in the neighbourhood of Sydney, where on several occasions I have taken its eggs, most frequently in the nests of *Rhipidura albiscapa.* Parramatta is fifteen miles distant from Sydney. I have now before me specimens obtained in different parts of New South Wales, but principally in the neighbourhood of Sydney; also from the eastern parts of Queensland, as far north as Cairns. Captain Shelley's descriptions of the adult males of *Cacomantis variolosus* and *C. insperatus* in the 'Catalogue of Birds'* do not agree with Gould's original description and figure of *C. insperatus* and description of *C. dumetorum,* the latter of which Captain Shelley places as a synonym of *C. variolosus.* Both species are stated to be somewhat similar to *C. merulinus,* but in the distinctions pointed out no reference is made to the tail-feathers. Captain Shelley thus describes the tail of *Cacomantis merulinus* (p. 269):—"Tail slaty-black, with white ends; the *outer webs* of the feathers notched with white; the *inner webs* regularly barred with white, most strongly so on the outer feathers." The outer webs of the tail-feathers of Gould's *C. insperatus* are uniform in colour and without any white notch, as shown in his figure of that species; and, according to Gould's description, the tail-feathers of *C. dumetorum* are similar.

Briefly summed up, Gould's *Cuculus insperatus* agrees with Latham's original description and figure of *C. flabelliformis* and must bear that name. *C. variolosus,* which is stated by Captain Shelley to be synonymous with *C. dumetorum,* must also be referred to the *C. flabelliformis* of Latham. Gould's name of *C. insperatus* cannot be used for a species that is not found in Australia, but inhabits New Guinea and other islands; and the *Cacomantis flabelliformis,* not of Latham, but of the 'Catalogue of Birds in the British

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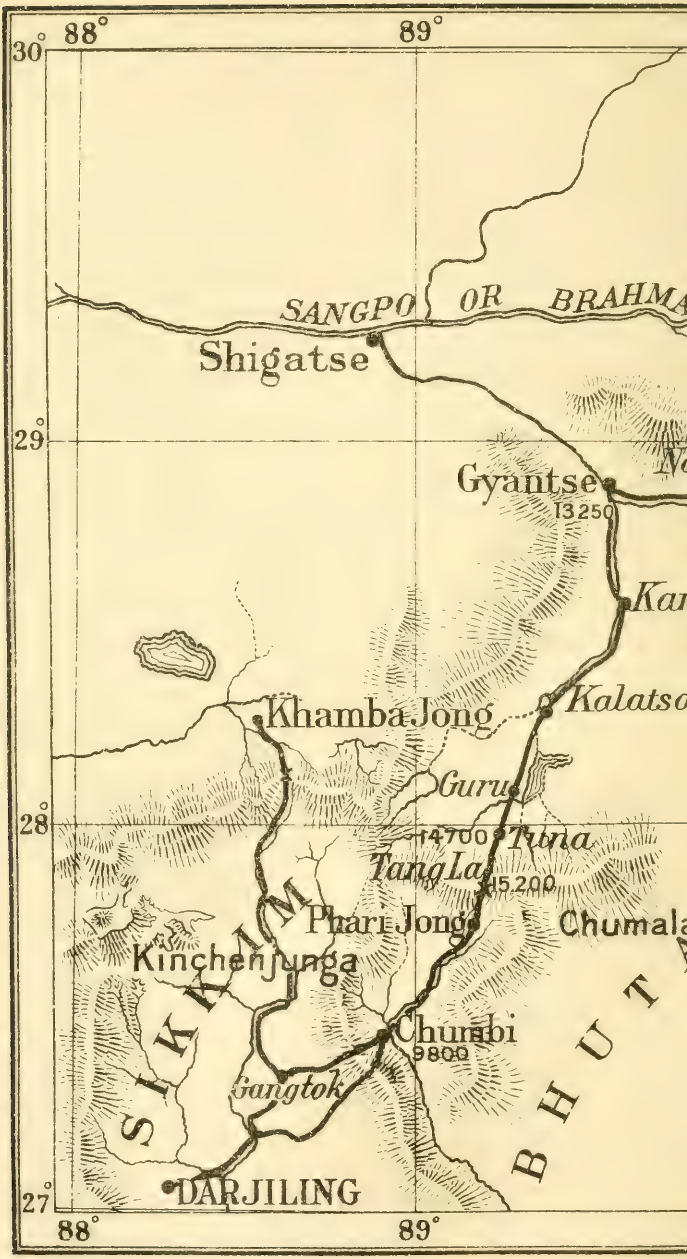
* Cat. B. Brit. Mus. vol. xix. pp. 272–3 (1891).

Museum,' will apparently in future have to bear the name of *Cacomantis rufulus* (Vieillot).

Recently, Dr. Ernst Hartert has pointed out in 'Novitates Zoologicæ' (vol. xii. p. 217, 1905) that Latham's *Columba pallida* (Ind. Orn. Suppl. p. lx) was founded on the "Pale Pigeon" of the 'General Synopsis of Birds' (Suppl. ii. p. 270), and is not applicable to the well-known Pallid Cuckoo of Australia and Tasmania. As there appears from Dr. Hartert's remarks to be some uncertainty also about the propriety of using the name of *Cuculus variegatus* Vieillot, which he substitutes for Latham's name, would it not have been advisable, when changing it, to have given it the first specific name applied where no doubt could possibly exist as to the species it was intended for in the description? At least there would have been a greater chance of finality being assured in the nomenclature. According to Pucheran, Vieillot's description of *Cuculus cinereus*, given on the same page as that of *C. variegatus*, was founded on a specimen from New Holland. Vigors and Horsfield's description of this species (under the name of *Cuculus inornatus*) is unmistakable, and under this name the well-known "Pallid Cuckoo" is beautifully figured by Gould in his folio edition of the 'Birds of Australia.'

Passing on to the Meliphagidæ, I think that Shaw's specific name of "*lunulatus*," in use for the well-known *Melithreptus* of South-eastern Australia, should give way to Latham's older name "*atricapillus*." The *Certhia atricapilla* of Latham's 'Index Ornithologicus,' p. xxxvii (1801) is founded on the Black-headed Creeper of his 'General Synopsis of Birds' (Suppl. ii. p. 167), which he states inhabits New South Wales. It is accurately described, except that Latham omits to make any reference to the lunate white marks on the back of the head. Shaw's description of *Certhia lunulata*, published in 1817 (Gen. Zool. viii. p. 224), is applicable to the young of *Meliphaga atricapilla*, "the back, wings, and tail" being described as "cinnamon-brown." Temminck (Pl. Col. pl. 331. fig. 1) figures it as *Meliphaga atricapilla*, and refers it to the *Certhia atricapilla* of Latham, while pointing out that the latter makes no reference in his description to the very characteristic white band on the occiput. Jardine and Selby, in their 'Illustrations of Ornithology' (vol. iii. pl. 134), figure *M. atricapilla* under Shaw's name of *lunulata*, and on the same plate figure, and on the following page describe, the Black-headed Honey-eater of Tasmania under the name of *Meliphaga atricapilla*. The latter name, however, is preoccupied by Latham for the continental species. Jardine and Selby state:—"The two birds which we have now figured appear to be involved in some obscurity with regard to each other.... They both inhabit New Holland, Van Diemen's Land, and the islands of the Southern Ocean." Lesson's description of *Eidopsarus affinis*, published in the 'Revue Zoologique' in 1839 (p. 167)—"capite, genis, gulâque nigerrimis,"—apparently applies to the Tasmanian species, but the habitat is given as "Nova Wallia meridionalis." In the 'Catalogue of Birds in the British Museum' (ix. p. 207), Dr. Gadow refers to this description as of "*Meliphaga*" *affinis* and places this as a synonym of Gould's later description, published in the P. Z. S. 1845, p. 62, under the name of *Melithreptus melanocephalus*. If it is really synonymous with the latter species, Lesson's specific name "*affinis*" should take precedence. It is to be regretted, however, that Jardine and Selby did not give a distinctive appellation of their own, instead of using a preoccupied name of Latham's, for theirs is the first accurate description and figure of the Black-headed Honey-eater of Tasmania, these having been published in their 'Illustrations of Ornithology' in 1835. The habitats of the two species figured and described are partly incorrect, for the Lunulated Honey-eater is confined to Australia, and the Black-headed Honey-eater to Tasmania and some of the larger islands of Bass's Strait. But the assignment of wrong habitats was of common occurrence at that time when so little was known of the Antipodes.

The next species to which I wish to refer is the *Corvus paradoxus* of Latham, which was erroneously stated to inhabit New Zealand, a habitat also given by Gould in his original description to *Oreocincla macrorhyncha*.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Phari Jong
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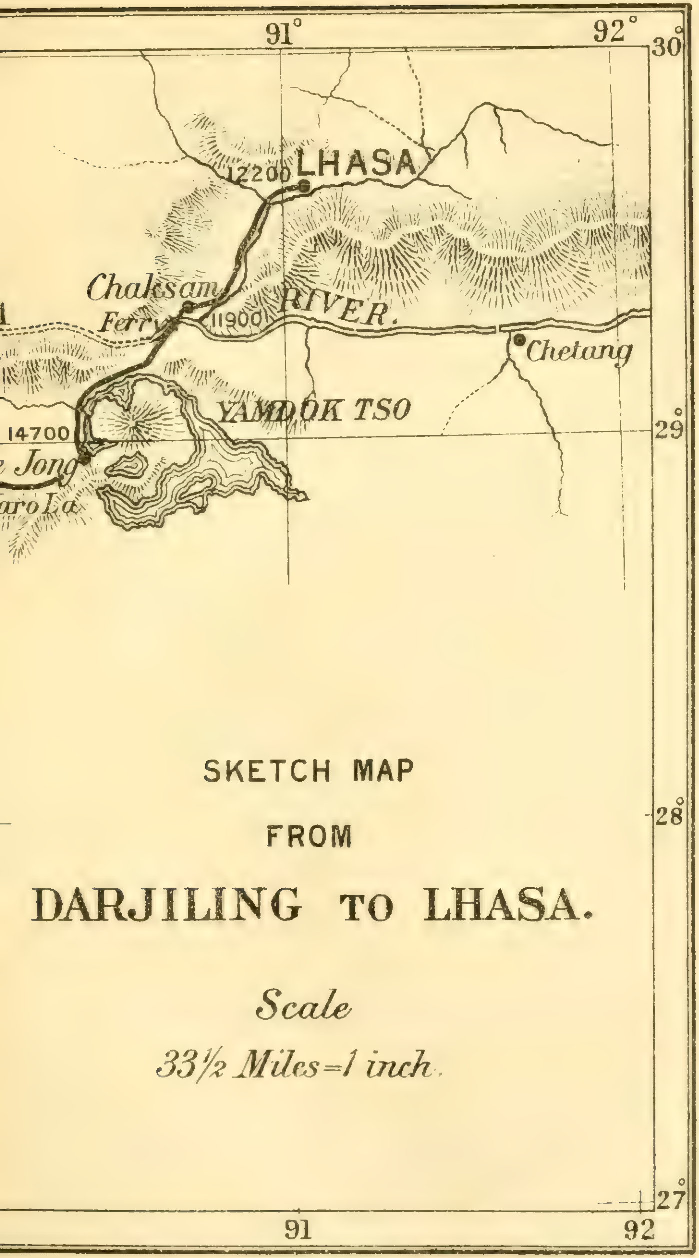
DARJILING
88°
89°

Ibis.1906. Pl. II.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SKETCH MAP

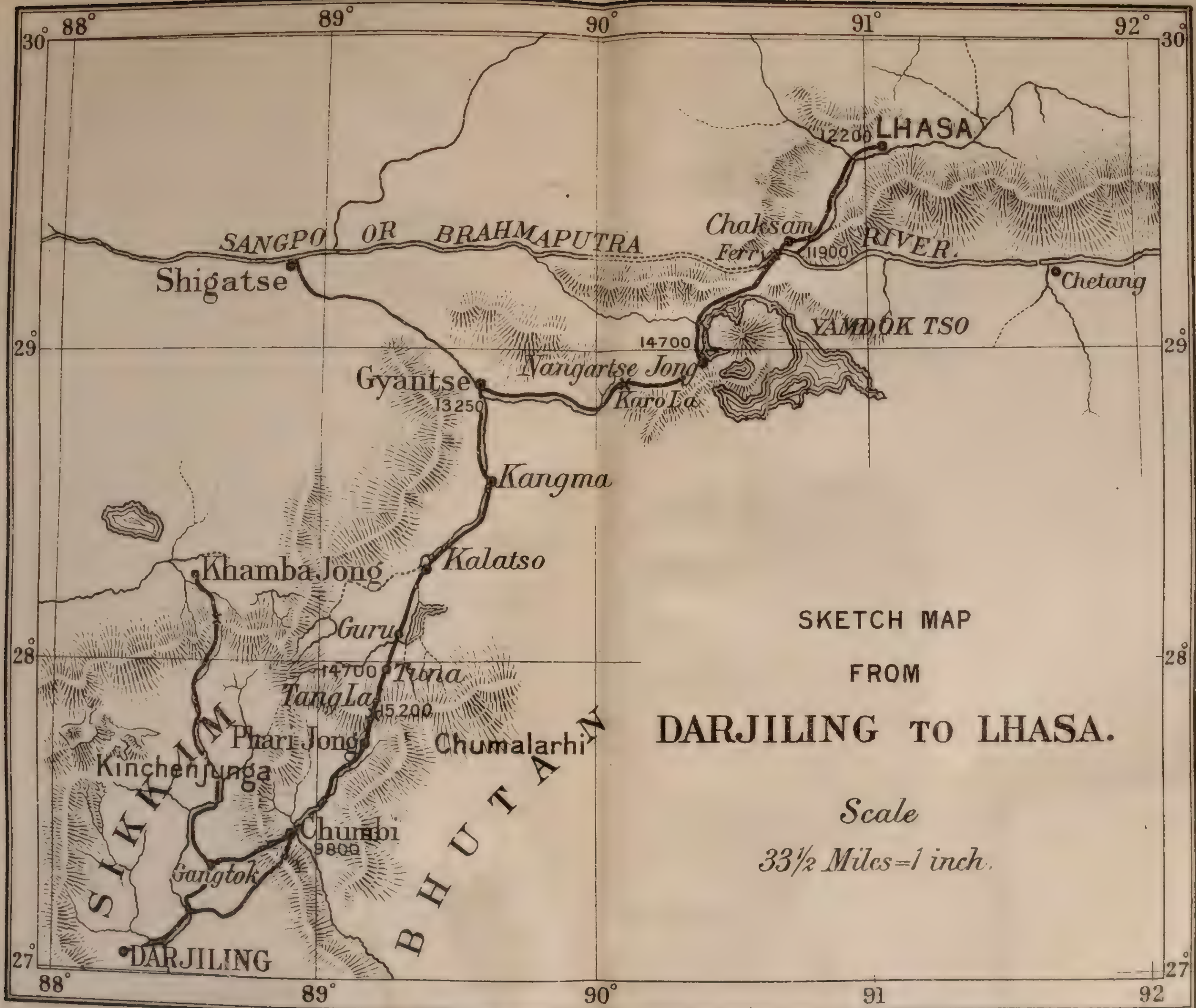
FROM

DARJILING TO LHASA.

Scale

33½ Miles=1 inch.

Bale & Danielsson, Ltd lith.



SKETCH MAP
FROM
DARJILING TO LHASA.

Scale
33½ Miles=1 inch.

88°
89°
90°
91°
92°
30°
29°
28°
27°
LHASA
12200
Chaksam
Ferry
11900
SANGPO OR BRAHMAPUTRA RIVER.
Shigatse
Chetang
YAMDOK TSO
14700
Nangartse Jong
Karo La
Gyantse
13250
Kangma
Kalatso
Khamba Jong
Guru
14700
Tuna
Tang La
15200
Phari Jong
Chumalarhi
Kinchenjunga
SIKKIM
BHUTAN
Chumbi
9800
Gangtok
DARJILING

Bale & Danielsson, L.td lith.

How Gould could refer the *Corvus paradoxus*[*] of Latham to the Wattled Honey-eater (*Anthochæra carunculata*) of Australia I am at a loss to understand. It was founded by Latham on the "Wattled Crow" of his 'General Synopsis of Birds' (Suppl. ii. p. 119). In the latter description Latham remarks:—"The feathers at the top of the head and neck edged with whitish, on the cheeks a little downy, at the bottom of which arises a cylindrical caruncle *ten lines* in length, hanging on each side of the neck; throat white, . . .; tail greatly cuneiform, each feather tipped with white." The length of the wattle alone, which is much shorter in the Australian species, would preclude it from being the Wattled Honey-eater (*Anthochæra carunculata*), and in other respects it entirely disagrees with Latham's original description of the latter species. The *Corvus paradoxus* of Latham is undoubtedly the Great Wattled Honey-eater of Tasmania, figured and described by Gould in his folio edition of the 'Birds of Australia'[†] under the name of *Anthochæra inauris.* That name, however, should give way to Latham's older name, and the Great Wattled Honey-eater of Tasmania should in future be known as *Anthochæra paradoxa.*

Finally, I may remark that in the 'Catalogue of Birds' (ix. p. 262) Dr. Gadow writes Vigors and Horsfield's generic name as "*Acanthochæra.*" But, as shown on reference to the original description in the Trans. Linn. Soc. xv. p. 320 (1826), where the derivation is given, the name was written *Anthochæra,* and I see no reason for altering it.

IV.—*On the Birds of Southern Tibet.*

By Captain H. J. Walton, Indian Medical Service.

(Plate II.)

In September 1903 I was appointed Medical Officer and Botanist to the Tibet Frontier Commission. Colonel Younghusband and the Commission were then at Khamba Jong.

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[*] Suppl. Ind. Orn. p. xxvi (1801).

[†] Birds Austr., fol. ed. vol. iv. pl. liv. (1848).

I marched up from Darjeeling through Sikhim, crossed the Kangra Lama Pass (17,200 feet), and joined the Commission on September 24th.

Khamba Jong is a Tibetan fort about fifteen miles from the frontier. It is situated on the top of a rocky hill, some 300 feet high. There is a small village at the foot, in a sheltered corner of which there are about half-a-dozen stunted willows—the only trees in the district. The surrounding country consists of an undulating plain covered with low wormwood scrub and coarse grass. The Himalayas, with the conspicuous peaks of Mount Everest, Kinchenjunga, and Kinchenjau, close the view to the south. A chain of low hills forms the northern boundary, separating the Khamba Jong plain from the valley of the Tsang Po (Brahmapoutra) River. This plain is watered by several small streams, and there are some moderately large lakes within a few miles of Khamba Jong. The mean elevation above sea-level is 15,200 feet.

During the summer months the climate is pleasantly warm and a fair crop of barley is grown; but in the autumn and winter the plain is swept by strong winds, and by the beginning of October there are sharp frosts at night. By the end of that month the winter arrives in earnest, and owing to the severity of the climate and to the absence of food, birds are then very scarce, with the exception of Lämmergeyers and Ravens, which appear to be quite impervious to the cold.

I left Khamba Jong in the middle of December, and marched in a rather leisurely way through Sikhim to Gantok; thence I proceeded over the Yak La Pass (about 14,500 feet) into the Chumbi Valley. This is a narrow valley stretching southwards in the form of a wedge for about fifty miles from the Tibetan plateau. It extends from the Tang La Pass to the foot of the Jelap La Pass, and lies between Bhutan and Sikhim. It has always been claimed by the Tibetans as part of Tibet, and has hitherto been the chief trade-route between Bengal, Gyantse, and Shigatse. The valley is watered by the Amo Chu River; its altitude varies between

9000 feet at Rinchengong and 15,200 feet at the Tang La. The forest level extends to a few miles north of Gautsa (13,500 feet).

I spent about a fortnight in the Chumbi Valley, and rejoined the Commission at Tuna at the end of January.

Tuna is a small village of about eight houses, a few miles to the north of the Tang La Pass and about eight miles to the west of Chumolarhi (23,950 feet). The surrounding country closely resembles that at Khamba Jong, with the same absence of trees and a scanty vegetation. During February and March the climate was exceedingly trying; high winds were almost continuous, and, blowing as they did over immense snowfields and glaciers, they were bitterly cold. The temperature rose a few degrees above freezing-point in the morning, but dropped to many degrees below zero Fahrenheit at night. Fortunately, although it snowed almost daily on the surrounding mountains, there was not much snow at Tuna itself, and such as did fall there did not usually lie on the ground for more than two or three days at a time. Still, the rigours of a Tibetan winter, at an altitude of 15,000 feet, were such as to render residence in small tents a decidedly unpleasant experience.

On April 4th the Commission left Tuna for Gyantse. The distance between the two places is 86 miles, and the journey took us eight days. In this short space of time we passed almost at once from winter to summer. Our route lay along the Hram Tso and Kala Tso lakes, which were covered with Geese and Ducks; thence we went almost due north to Gyantse. Although we had passed a few small and scattered plantations on the way, it was not until we reached the Gyantse plain that trees (mostly willows, with some poplars) became at all numerous. Here we found many groves—some of considerable size—and the whole aspect of the country was entirely changed. In the place of bare precipitous mountains and the barren plain of Tuna, we found ourselves in a fertile valley, nearly the whole of which was under cultivation, and which was everywhere intersected by well-planned irrigation-channels.

Irises and other flowers were just beginning to blossom, and day by day migratory birds arrived.

During the three weeks after our arrival there was plenty of zoological and botanical work to be done; unfortunately, this was suddenly brought to a compulsory close at the most promising time, as the Commission was attacked by the Tibetans in the early morning of May 5th. For the next two months we were in a state of siege. It is true that our investment was not very rigorous, and that we managed to keep our communications with India almost unimpaired; but as it was sufficient to shew one's head outside the lines to call forth an outbreak from the famous "jingals from the Jong," ornithological observations and collecting were practically impossible.

On July 6th our confinement was brought to an end by the capture of the Jong and the final dispersal of the Tibetan army by the British troops under Brigadier-General MacDonald. On July 14th we started for Lhasa, where we arrived on August 3rd. We were delayed for a week at the Tsang Po (Brahmapoutra) River. The river was in flood, and the only available means of transport (besides a few small Berthon boats that we had brought with us) were a couple of clumsy ferry-boats which the retreating Tibetans had obligingly left behind them.

On the march to Lhasa I experienced the difficulty of attempting to do scientific work when the first consideration is necessarily the military. No shooting was permitted, except on rare occasions, and no one was allowed to wander away from the line of march. I endeavoured to make up for the prohibition of collecting by taking notes of all the birds that I saw; but I was unable to identify satisfactorily several of the species. Even at Lhasa itself the restriction was not entirely removed, though I was permitted to use a small-bore collecting-gun.

Lhasa lies in an open valley, at an elevation of 12,200 feet. The country around the city is highly cultivated, and large crops of barley, wheat, and vegetables are grown. Besides the area under cultivation, there are many groves of trees;

the Kyi Chu River flows through many channels, and there is a good deal of marshy ground. We left Lhasa, on our return march to India, on September 23rd: during our stay the weather was quite hot, though there were numerous thunderstorms and much rain.

I am well aware that the following notes on the birds of Southern Tibet are very incomplete, and that, given better opportunities, I should have been able to increase my list very considerably. In addition to the reasons given above, which interrupted regular and systematic observations, I was unable to devote the whole of my spare time to ornithology, as I was also engaged in making collections in other branches of natural history. My professional work with the Commission, and in connection with the Civil Dispensaries for Tibetans that I established at Gyantse and Lhasa, claimed the greater part of my time. However, as there have been no opportunities in the past of studying the birds of this part of Tibet, and as it does not appear likely that the chance will occur again for some time, such observations as I was able to make probably possess sufficient interest to make it worth while recording them.

I am very glad to take this opportunity of expressing my gratitude to Colonel Sir Francis Younghusband, K.C.I.E., for the active interest that he took in my ornithological work, for many observations that he communicated to me, and for some specimens.

I am also much indebted to Major C. H. D. Ryder, R.E., of the Survey of India, for his kindness in preparing the sketch-map (Plate II.) that accompanies this article.

At Khamba Jong, at the end of September and during the first half of October, besides the resident Tibetan birds, there were large numbers of migrants: *Anthus striolatus, Motacilla alba, M. flava, M. citreola, Calandrella tibetana, Phylloscopus affinis, Upupa epops, Ruticilla rufiventris, R. hodgsoni*, and *Pratincola maura* were all very common, and a few specimens were obtained of *Calliope pectoralis, Lanius tephronotus, Anorthura tibetana*, and *Cyanecula suecica.*

These were the early migrants, and had left the district by the middle of October. The following birds passed through Khamba Jong during the next six weeks, but were not seen after the end of November: *Cinclus kashmiriensis*, *C. younghusbandi*, and *Ruticilla erythrogaster*. All the migratory birds appeared to proceed in a northerly direction from Khamba Jong, and, as I have stated below, I believe that the migration-route to and from Southern Tibet lies along the valley of the Tsang Po (Brahmapoutra) River.

After leaving Khamba Jong, on my way to the Chumbi Valley, I collected birds in Sikhim, and was struck by the dissimilarity between the birds of the two adjacent valleys —many birds that were common in one not being seen, even at the same elevations, in the other.

In the Chumbi Valley, in January, the prevailing birds were *Nucifraga hemispila*, *Merula ruficollis*, *Trochalopterum nigrimentum*, *Lophophanes beavani*, and *Ruticilla schisticeps*. I saw Ibis-bills (*Ibidorhynchus struthersi*) at 12,500 feet; here, also, Goosanders were fairly common and there were a few Teal (*Nettion crecca*).

On the plain below Phari, at about 14,500 feet, there were large flocks of Snow-Finches—*Montifringilla mandellii*, *M. ruficollis*, and *M. blanfordi*.

During the extremely cold months of February and March I was able to collect regularly at Tuna (15,000 feet). Considering how unattractive such an exposed place must have been, and how little in the way of food it had to offer, the number of birds found there was remarkable. Lämmergeyers and Ravens were in immense numbers, attracted no doubt by the offal and rubbish thrown out from our camp, but it is difficult to imagine what the large flocks of Choughs found to eat at a time when the ground was frozen to an almost stony hardness; yet they managed, somehow or other, to keep in good condition. For the Eagles there were plenty of hares (*Lepus oiostolus*), and the few resident Owls probably caught mouse-hares (*Lagomys*) on the sunny mornings when the latter emerged from their burrows. But it was a puzzle to me to account for the presence of such large numbers of Finches: certainly their diet can have had little of variety about it, and must have consisted of no more than seeds of the coarsest grasses; yet the birds kept fat and lively.

Besides those already mentioned, the commonest birds at Tuna during the winter months were Horned Larks (*Otocorys elwesi*), the two Snow-Finches (*Montifringilla blanfordi* and *M. ruficollis*), *Columba rupestris, Accentor rubeculoides, Podoces humilis*, and Snow-Cocks (*Tetraogallus tibetanus*). On the coldest days, especially if snow had fallen, Adams's Mountain Finches (*Montifringilla adamsi*) came down to the plain; this species is evidently very hardy, and usually kept to the mountains. Towards the middle of March a few other birds appeared: *Melanocorypha maxima*, at first in small numbers and later in large flocks, *Carpodacus severtzovi, C. rubicilloides*, and, at the end of the month, *Motacilla hodgsoni*.

At the beginning of April large numbers of Geese and Ducks were assembled on the Hram Tso and Kala Tso lakes between Tuna and Gyantse; for the most part they were very tame, and a good many were shot by the officers of the Commission and the escort. The only species of Goose that I saw was the Bar-headed Goose (*Anser indicus*); the most numerous Ducks were Pintails (*Dafila acuta*) and Mallards (*Anas boscas*); besides these there were many Teal (*Nettion crecca*), White-eye Pochards (*Nyroca ferruginea*), and a few Shovelers (*Spatula clypeata*).

Ruddy Sheldrakes (*Casarca rutila*) were in immense numbers, both on the lakes and on the banks of the small streams in the valleys; they were almost ludicrously tame.

Presumably most of these wildfowl had wintered in India, but it is certain that few, if any, of them had made their way to Tibet up the Chumbi Valley. In that case I could scarcely have failed to notice them at Tuna. Again, within a few days of our arrival at Gyantse, the summer migrants began to appear, though none were seen during our march from Tuna. I think, therefore, that there can be little doubt that the main migration-route in Southern Tibet lies along the Tsang Po (Brahmapoutra) Valley, and that those birds which visit the Plains of India during the cold weather come and go *viâ* Assam, and do not take the shorter routes through Sikhim or the Chumbi Valley. It is well known that birds on migration are very apt to follow river-courses; and in travelling along the Tsang Po (the valley of which, as far as we observed it, is broad and fertile, with a gentle gradient) the birds would be relieved from the necessity of crossing the lofty and exposed mountain-passes at the heads of the other two routes.

Owing to the comparatively well-wooded nature of the surrounding country, many resident birds were found at Gyantse that had not been observed at Khamba Jong or Tuna. Ravens were as common there as elsewhere, and many Red-billed Choughs came down daily from the surrounding hills to feed in the fields of the Gyantse plain. Kites (*Milvus melanotis*), Tits (a new species of *Parus* of the type of *P. minor*), Cinnamon Tree-Sparrows (*Passer cinnamomeus*), Skylarks, and Magpies were all common, and, with the exception of a very few individuals of the last-named species, had not been met with previously. The earliest migrants were Red-throated Ouzels (*Turdus ruficollis*) and Redstarts (*Ruticilla hodgsoni* and *R. rufiventris*). A little later, towards the end of April, Rose-Finches, Bush-Chats, Hoopoes, and Wagtails began to arrive. The latest comers of all, of which none were seen before the beginning of May, were Willow-Warblers (*Phylloscopus affinis*), Sparrow-Hawks (*Accipiter nisus*), Kestrels (*Tinnunculus alaudarius*), Hobbies (*Falco subbuteo*), Swallows (*Hirundo daurica*), Terns (*Sterna fluviatilis*), and Shrikes (*Lanius tephronotus*).

The Turtle-Dove (*Turtur orientalis*), which is very common at Gyantse, is probably, for the most part, a very early migrant, though I am inclined to think that some individuals, at any rate, are residents throughout the year.

Just as the rush of migrants was at its height, the renewal of hostilities and the investment of the Commission at Gyantse rendered impossible all but the most desultory ornithological observations. Thus I missed noting the dates of arrival of the Wagtails (*Motacilla alba, M. citreola, M. personata,* and *M. flava*), Redshanks (*Totanus calidris*), Sand-Martins (*Cotile riparia*), Wheatears (*Saxicola montana*), and several other birds.

In July, on the road between Gyantse and Lhasa, several new birds were seen. On the Yam Dok Cho lake, Great Crested Grebes (*Podicipes cristatus*) were present in considerable numbers; while Wagtails of several species (of which *Motacilla citreola* was the most common) and Redshanks were flying about the marshes.

While the Field Force was engaged in crossing the Tsang Po River I obtained permission to shoot, and got several birds that were new to my Tibetan collection. Swifts and Cormorants were very common on the river.

Lhasa itself was somewhat disappointing in that it yielded few new species. However, I saw and obtained there, for the first time in Tibet, Moorhens (*Gallinula chloropus*), Coots (*Fulica atra*), and Wrynecks (*Iynx torquilla*). White-eyed Pochards were very numerous; there were smaller numbers of Mallards and Common Teal, with a few Solitary and Pintail Snipe. The new Rose-Finch, *Carpodacus waltoni*, occurred also at Lhasa. All the commoner birds of Lhasa were the same as those of Gyantse.

In the following list I have enumerated the species of birds which I met with in Southern Tibet, and have added short field-notes regarding them. In almost all cases specimens were obtained and preserved; where this was not done, I have stated the fact.

The nomenclature adopted is, in the case of birds which occur in India, that used by Messrs. Oates and Blanford (Fauna Brit. Ind., Birds); for the remaining species I have generally followed the British Museum Catalogue and Dr. Bowdler Sharpe's 'Hand-list.'

I have added the Tibetan names in a few cases; but, for the most part, either none were obtainable or those given to me were obviously applied to more than one species.

I am under a great obligation to Dr. Bowdler Sharpe and to Mr. Ogilvie-Grant for their kindness in identifying many of my specimens and for much other help; and my sincere thanks are due to Mr. C. Chubb for his invaluable assistance.

1. CORVUS CORAX.

Corvus corax Linn.; Oates, Faun. Brit. Ind., Birds, i. p. 14; Sharpe, Sci. Result. Yark. Miss., Aves, p. 15 (1891).

a. ♂ adult. Khamba Jong, 15,200 feet, Sept. 20, 1903. Length of wing 18·2 inches.

No. 1715. ♂ adult. Khamba Jong, 15,200 feet, Oct. 3, 1903. Length of wing 19·2 inches.

Ravens were ubiquitous throughout the whole of Southern Tibet, and were common everywhere, both in the cultivated valleys and on the bare uplands. They were remarkably fearless and swarmed about all our camps, disputing the possession of offal with the Tibetan dogs. Away from the vicinity of camps and villages they generally occurred in pairs. In the spring most of them became very ragged, and it was then difficult to procure good specimens. I found a nest, containing young birds, on a ledge of a large rock near the Kala Tso Lake on April 6th.

2. PICA BOTTANENSIS.

Pica bottanensis Deless.; Oates, Faun. Brit. Ind., Birds, i. p. 25.

a. ♂ adult. Khamba Jong, 15,200 feet, Sept. 12, 1903.

Nos. 1942, 1943. ♂ adult. Gyantse, 12,000 feet, April 29, 1904.

No. 2011. ♀ adult. Lhasa, 12,200 feet, Aug. 18, 1904.

Magpies were very common and resident wherever there were trees. A few were generally to be seen at Khamba Jong near the three small willow trees in the village, or flying about the rock on which the Jong is situated. These particular birds, probably on account of the absence of cover, were extremely wild, but elsewhere, as at Gyantse and Lhasa, Magpies were by no means shy. At the beginning of April I noticed large gatherings of Magpies, like those mentioned by Darwin ('Descent of Man'): by the middle of the month these assemblages ceased; the birds had paired and had begun to build new nests or repair old ones.

The Tibetan name for the Magpie is "Tra-kak."

3. UROCISSA FLAVIROSTRIS.

Urocissa flavirostris (Blyth); Oates, Faun. Brit. Ind., Birds, i. p. 27; Sharpe, Sci. Result. Yark. Miss., Aves, p. 20.

No. 1811. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 19, 1903. Bill pale waxy-yellow; feet orange; iris dark brown.

No. 1835. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 24, 1903.

Very common at Lamteng, but not seen in the Chumbi Valley.

4. NUCIFRAGA HEMISPILA.

Nucifraga hemispila Vig.; Oates, Faun. Brit. Ind., Birds, i. p. 41; Berez. & Bianchi, Aves Exp. Potan. Gan-su, p. 120.

No. 1807. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 18, 1903.

No. 1814. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 20, 1903.

No. 1830. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 23, 1903.

Common in Sikhim, and in the Chumbi Valley near New Chumbi, in December and January.

5. PODOCES HUMILIS.

Podoces humilis Hume; Sharpe, Cat. B. Brit. Mus. iii. p. 152 (1877); id. Sci. Result. Yark. Miss., Aves, p. 23; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 124.

a, b. Adult. Khamba Jong, 15,200 feet, Sept. 1903.

Nos. 109, 1700. ♀ adult. Khamba Jong, 15,200 feet, Sept. 26, 27, 1903. Bill and feet black; iris dark brown.

Nos. 1743. ♀; 1757. ♂ adult. Khamba Jong, 15,200 feet, Oct. 9, 31, 1903.

Nos. 1769, 1801. ♂ adult; 1802. ♀ adult. Khamba Jong, 15,200 feet, Nov. 6, 30, 1903.

Nos. 1876. ♂; 1880, 1885. ♀ adult. Tuna, 15,000 feet, Feb. 8–22, 1904.

No. 1983. ♂ adult. Nagartse, 13,000 feet, July 20, 1904.

This bird was very common on the bare tracts of land, but was never seen where there was cultivation. It usually occurred in small parties of five or six; when disturbed each bird went off separately, but the party re-formed almost at once. It is not at all noisy, but occasionally utters a low whistling note. I saw large numbers of these birds daily for many months and never heard them make anything at all resembling the "harsh reiterated Woodpecker-like cries" mentioned by Mr. A. H. Evans (Cambr. Nat. Hist., Birds, p. 558).

The bird probes the ground with its curved bill like a Hoopoe, and runs with great swiftness. It is fond of perching on stones or mounds of earth, and has the curious habit of bobbing up and down like a Dipper on first alighting. The flight is very weak and laboured, and the bird rarely rises more than two or three feet above the level of the ground. In winter it frequently enters the burrows of a mouse-hare (*Lagomys curzoniæ*). I failed to find any nests.

The plumage is very lax and hair-like, and it is difficult to prepare a good skin. Although I did not see any examples of this species actually within Sikhim limits, it was quite common within a mile of the top of the Kangra Lama Pass.

6. Pyrrhocorax graculus.

Graculus eremita (Linn.); Oates, Faun. Brit. Ind., Birds, i. p. 43.

Graculus graculus (Linn.); Sharpe, Sci. Result. Yark. Miss., Aves, p. 21.

a. ♂ adult; *b.* ♀ adult. Khamba Jong, 15,200 feet, Sept. 10, 1903.

No. 1714. ♀ adult. Khamba Jong, 15,200 feet, Oct. 3, 1903.

No. 1790. ♀ adult. Khamba Jong, 15,200 feet, Nov. 23, 1903.

All the specimens belong to the largest form: in *b* the wing-length is 13·9 inches.

A very common Tibetan bird; it was observed on the mountains throughout the whole of the country visited by the Commission. During the summer the Choughs retired from the cultivated valleys at Gyantse and Lhasa, but flocks occasionally came down from the hills to feed in the fields. Though a great many birds remained at Tuna during the winter, their numbers increased largely in March; they then assembled in very large flocks, like Rooks, and were constantly calling. The flocks went off every morning to some distant feeding-grounds, returning to Tuna in the evening, and performing various evolutions in the air as they flew.

I did not see *Pyrrhocorax alpinus* in Tibet.

+ 7. Parus major tibetanus.

Parus major tibetanus Hartert, Vögel der pal. Fauna, pt. 3.

No. 1909. ♂ adult. Gyantse, 12,000 feet, April 19, 1904. Bill black; feet black; iris dark brown.

No. 1936. ♀ adult. Gyantse, 12,000 feet, April 27, 1904. Feet greyish horny.

No. 1957. ♂ adult. Gyantse, 12,000 feet, May 19, 1904.

No. 2019. ♀ adult. Lhasa, 12,200 feet, August 24, 1904.

No. 2036. ♂ adult. Lhasa, 12,200 feet, Sept. 3, 1904. This specimen is in full moult.

Very common and breeding at Gyantse, and from the Brahmapoutra Valley to Lhasa—in fact, wherever there were plenty of trees.

This form resembles *P. major* in possessing a yellowish-green back, but differs in the amount of white on the tail. It is, moreover, a larger bird. In three Indian specimens taken at random from my collection the wing-measurements are:—

(1) Male. Garhwal	2·65″
(2) Unsexed specimen. Satara, Bombay	2·6″
(3) Male. Ranikhet, Kumaon	2·8″

The five Tibetan specimens have the following wing-measurements :—3·1, 3·1, 2·95, 3·0, 2·95 inches.

The Tibetan name of this species is "Chi-u-ka-yul."

8. Lophophanes beavani.

Lophophanes beavani Blyth ; Oates, Faun. Brit. Ind., Birds, i. p. 59.

No. 1841. ♂ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 16, 1904. Bill black ; feet blackish slaty ; iris dark brown.

No. 1849. ♂ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 19, 1904.

Quite common in the forests of the Chumbi Valley in winter.

9. Garrulax leucolophus.

Garrulax leucolophus (Hardw.) ; Oates, Faun. Brit. Ind., Birds, i. p. 77.

No. 1689. ♀ adult. Pakhyong, Sikhim, Sept. 16, 1903. Bill black ; feet dark slaty ; iris greyish brown.

A common bird in Sikhim.

10. Trochalopterum nigrimentum.

Trochalopterum nigrimentum Hodgs.; Oates, Faun. Brit. Ind., Birds, i. p. 91.

No. 1691. ♂ adult. Lamteng, Sikhim, 9000 feet, Sept. 21, 1903. Bill black ; feet dark brown ; iris light brown.

No. 1836. ♂ adult. Nyema, Sikhim, 8000 feet, Dec. 29, 1903. Bill black ; feet dark brown ; iris light brown.

No. 1838. ♂ adult. Nyema, Sikhim, 8000 feet, Dec. 30, 1903.

Very common in Sikhim in winter, but not seen in the Chumbi Valley.

11. Trochalopterum affine.

Trochalopterum affine (Hodgs.) ; Oates, Faun. Brit. Ind., Birds, i. p. 94.

No. 1808. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 18, 1903. Bill black ; feet light brown ; iris dark brown.

No. 1815. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 20, 1903.

No. 1816. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 20, 1903.

No. 1843. ♂ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 16, 1904.

No. 1852. ♀ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 19, 1904.

Common in Sikhim, and even more so in the Chumbi Valley in December and January.

A specimen of *Trochalopteron henricii* (Oust., Ann. Sc. Nat. xii. p. 274 (1891); id. Nouv. Arch. Mus. v. pl. iii. fig. 2) was obtained by Colonel Waddell, I.M.S., at Chaksam (Brahmapoutra Valley) in September. It was erroneously described as a new species, under the name of *Garrulax tibetanus*, by Mr. H. E. Dresser in the 'Proceedings of the Zoological Society,' 1905, vol. i. p. 54, pl. v. fig. 2.

12. PROPARUS VINIPECTUS.

Proparus vinipectus (Hodgs.); Oates, Faun. Brit. Ind., Birds, i. p. 173.

No. 1809. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 19, 1903. Bill dusky, lower mandible fleshy; feet livid fleshy; iris hoary white.

No. 1832. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 24, 1903.

I did not notice this bird in the Chumbi Valley, though it was common in Sikhim.

13. STACHYRIDOPSIS RUFICEPS.

Stachyridopsis ruficeps (Blyth); Oates, Faun. Brit. Ind., Birds, i. p. 164.

No. 1837. ♂ adult. Nyema, Sikhim, 8000 feet, Dec. 29, 1903. Bill plumbeous, lower mandible pale fleshy; feet brownish yellow; iris red.

Common at low elevations in Sikhim.

14. MYIOPHONEUS TEMMINCKI.

Myiophoneus temmincki Vig.; Oates, Faun. Brit. Ind., Birds, i. p. 178; Sharpe, Sci. Result. Yark. Miss., Aves, p. 100.

No. 1831. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 24, 1903. Bill yellow, culmen and sides of upper mandible black; feet black; iris dark brown.

This bird occurred in the lower parts of the Chumbi Valley.

15. Babax waddelli.

Babax waddelli Dresser, P. Z. S. 1905, vol. i. p. 54, pl. iv.

No. 1912. ♀ adult. Gyantse, 12,000 feet, April 19, 1904. Bill black; feet greyish brown; iris hoary white.

No. 1995. ♂ adult. Chaksam, Upper Brahmapoutra (Tsang Po) Valley, July 30, 1904.

The only places where I came across this bird were Gyantse and Chaksam, in the Brahmapoutra Valley. I saw one or two caged specimens in the Chinese quarter at Lhasa, but did not observe any wild individuals in the neighbourhood of that town, although there were plenty of apparently suitable places; indeed, the Tibetans told me that they did not occur at Lhasa. When we arrived at Gyantse on April 11th, I found these birds in two small plantations. They were in troops of five or six, and kept mainly to the ground, hopping about rapidly and turning over leaves, &c. Although found near dwelling-houses, they are shy skulking birds and exceedingly wary. The outbreak of hostilities at Gyantse prevented me from observing the date of their departure from that place; there were certainly none there at the beginning of July. At the end of that month I found a few in the Brahmapoutra Valley: a male that I then shot had well-developed reproductive organs. This bird has a loud call of two harsh notes, rapidly repeated. The stomach-contents of the two birds that I shot consisted of insects only.

16. Leptopœcile obscura.

Leptopœcile obscura Przew.; Oust., N. Arch. Mus. (3) v. p. 185.

No. 1950. ♂ adult. Gyantse, 12,000 feet, May 2, 1904. Bill black; feet blackish brown; iris deep red.

Sir Francis Younghusband shot two male specimens of this bird at the beginning of May at Gyantse. They were hopping about near the top of a low tree, and were quite silent and not at all shy. The weather for a day or two previously had been very cold and unsettled, and the mountains surrounding the Gyantse plain were covered with snow to a low level. It is probable that this severe weather had driven the birds down from a higher altitude. I did not meet with this species myself. It is well known to the Tibetans, who call it "Pang-che," which means "The little bird (which lives) on grassy hill-sides."

17. CERTHIA STOLICZKÆ.

Certhia stoliczkæ Brooks; Oates, Faun. Brit. Ind., Birds, i. p. 332.

No. 1823. ♀ adult. Lamteng, 9000 feet, Dec. 21, 1903. Bill dusky brown, lower mandible fleshy; feet dark brown; iris dark brown.

Common in Sikhim, but not seen anywhere in Tibet.

18. TICHODROMA MURARIA.

Tichodroma muraria (Linn.); Oates, Faun. Brit. Ind., Birds, i. p. 334; Sharpe, Sci. Result. Yark. Miss., Aves, p. 63; Oust., N. Arch. Mus. (3) v. p. 206; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 126.

No. 1793. ♂ adult. Khamba Jong, 15,200 feet, Nov. 23, 1903. Bill black; feet black; iris dark brown.

I shot a Wall-creeper at Khamba Jong, and saw a few others both there and at Lhasa. They were all extremely restless and shy, but could easily be recognised at a considerable distance by the habit which they have of repeatedly expanding and closing the wings while clinging to the face of a rock.

19. ANORTHURA TIBETANA.

Anorthura tibetana Walton, Bull. Brit. Orn. Club, xv. p. 93 (July 1905).

No. 1747. ♂ adult. Khamba Jong, 15,200 feet, Oct. 9, 1903.

No. 1779. ♂ adult. Khamba Jong, 15,200 feet, Nov. 11, 1903.

This Wren differs from *A. nipalensis* in being of a duller, much less rufous, brown. The abdomen is only slightly tinged with rufous and is markedly paler than that of *A. nipalensis*. The wing- and bill-measurements are both slightly longer than those of *A. nipalensis* and *A. neglecta*.

I shot several specimens of this Wren at Khamba Jong during the autumn. They occurred there during very cold weather, when all the streams were frozen hard, except one that was supplied by a clear warm spring.

20. PHYLLOSCOPUS AFFINIS.

Phylloscopus affinis (Tickell); Oates, Faun. Brit. Ind., Birds, i. p. 401; Sharpe, Sci. Result. Yark. Miss., Aves, p. 77.

Herbivocula affinis Oust. N. Arch. Mus. (3) v. p. 180.

Nos. 1718. ♂ adult.
136. ♀ ,,
142. ? ,,
1733. ♀ ,,
1751. ♂ ,,
} Khamba Jong, 15,200 feet, Oct. 4–10, 1903. Bill very dark brown, lower mandible dull yellow; feet dark greenish yellow; iris dark brown.

Nos. 1947, 1949, 1951, 1952, 1961. ♂ adult. Gyantse, 12,000 feet, May 1–3, 1904.

No. 1972. ♂ adult. Gyantse, 12,000 feet, June 30, 1904.
No. 1998. ♂ adult. Lhasa, 12,200 feet, Aug. 15, 1904.
No. 2020. ♀ adult. ,, ,, Aug. 24, 1904.
No. 2051. ♂ adult. ,, ,, Sept. 20, 1904.

This is by far the most common Leaf-Warbler in S. Tibet. It remained at Khamba Jong up to about the end of the third week in October; it was quite common there in a sheltered but treeless valley behind the Jong, where it frequented a thick cluster of nettles. It reappeared at Gyantse at the end of April, and remained throughout the summer, being especially numerous at Lhasa in August.

21. PHYLLOSCOPUS FUSCATUS.

Phylloscopus fuscatus (Blyth); Oates, Faun. Brit. Ind., Birds, i. p. 405; Sharpe, Sci. Result. Yark. Miss., Aves, p. 78.

a. ♂ adult. Khamba Jong, 15,200 feet, Sept. 7, 1903.

The specimens in the collection of the British Museum can be separated into two divisions according to the colour of the supercilium. In Chinese birds this appears to be invariably of a rich buff colour, whilst Indian and Burmese examples have the superciliary streak almost white. The Khamba Jong specimen belongs to the latter series.

Although I shot a great many Willow-Warblers during the summer in Tibet, the specimen from Khamba Jong was the only one that I procured.

22. ACANTHOPNEUSTE VIRIDANA.

Acanthopneuste viridanus (Blyth) ; Oates, Faun. Brit. Ind., Birds, i. p. 414.

Acanthopneuste viridana Sharpe, Sci. Result. Yark. Miss., Aves, p. 80.

No. 2035. ♂ adult. Lhasa, 12,200 feet, Sept. 2, 1904. Bill blackish horn-coloured, lower mandible and gape yellow ; feet dark brownish green ; iris dark brown.

This bird is much darker than any of the series in the British Museum : in wing-formula and in all other respects it agrees with the specific characters of *A. viridana.*

23. LANIUS TEPHRONOTUS.

Lanius tephronotus (Vig.) ; Oates, Faun. Brit. Ind., Birds, i. p. 465 ; Oust. N. Arch. Mus. (3) v. p. 216.

Collurio tephronotus Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 106.

No. 101. ♂ adult. Khamba Jong, 15,200 feet, Sept. 25, 1903.

No. 145. ♂ imm. Khamba Jong, 15,200 feet, Oct. 9, 1903.

No. 1731. ♂ imm. Khamba Jong, 15,200 feet, Oct. 7, 1903.

No. 1749. ♂ imm. Khamba Jong, 15,200 feet, Oct. 10, 1903.

No. 1955. ♀ adult. Gyantse, 12,000 feet, May 3, 1904.
No. 1968. ♂ adult. ,, ,, June 30, 1904.
No. 1969. ♀ adult. ,, ,, ,, ,,
No. 2017. ♂ adult. Lhasa, 12,200 feet, Aug. 24, 1904. In full moult.

No. 2018. ♀ imm. Lhasa, 12,200 feet, Aug. 24, 1904.
No. 2021. ♀ imm. ,, ,, Aug. 27, 1904.

Very common at Gyantse and Lhasa, and in the Brahmapoutra Valley during the summer. A few specimens were obtained at Khamba Jong up to the middle of October. This was the only Shrike seen in Tibet. The Tibetan name is "Jo-nak."

This species has been recently described and figured under the name *Lanius lama* by Mr. Dresser in the 'Proceedings of the Zoological Society,' 1905, vol. i. p. 55, pl. v. fig. 1. I have a good series of specimens of all ages, and there is no doubt that the bird is *L. tephronotus* (Vigors).

24. PRATINCOLA MAURA.

Pratincola maura (Pall.); Oates, Faun. Brit. Ind., Birds, ii. p. 61; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 81.

a. ♂. Khamba Jong, 15,200 feet, Sept. 9, 1903.
b. ♂. ,, ,, Sept. 12, 1903.
c. ♀. ,, ,, Sept. 18, 1903.
Nos. 102, 111. ♂. Khamba Jong, 15,200 feet, Sept. 25, 1903.
No. 1736. ♀. ,, ,, Oct. 7, 1903.
No. 1917. ♀. Gyantse, 12,000 feet, April 20, 1904.
No. 2050. ♀. Lhasa, 12,200 feet, Sept. 20, 1904.
No. 2053. ♂. ,, ,, Sept. 21, 1904.
No. 2054. ♀. ,, ,, ,, ,,

This Stonechat was fairly common at Khamba Jong up to the middle of October. I saw a few at Gyantse in April, and between that town and Lhasa in July. Again, in the middle of September, some individuals passed through Lhasa, but they were not at all numerous there.

The Tibetan birds are somewhat larger, with a longer wing, than most of the Indian and Chinese specimens with which I have compared them, but agree perfectly with them in plumage.

25. SAXICOLA OREOPHILA.

Saxicola oreophila Oberh., Proc. U.S. Nat. Mus. xxii. p. 221 (1901); Sharpe, Hand-list B. iv. p. 179 (1903).

No. 1988. ♂ adult. Chaksam, Brahmapoutra (Tsang Po) Valley, 12,000 feet, July 27, 1904. Bill and feet black; iris dark brown.

No. 1989. ♂ adult. Chaksam, Brahmapoutra (Tsang Po) Valley, 12,000 feet, July 27, 1904.

I saw a few of these birds at Gyantse at the end of April, but they did not remain for more than three or four days. I shot three specimens on some sandy land in the Tsang Po Valley in July: the species was nowhere common.

26. Henicurus, sp. inc.

A Forktail of this genus occurred in the Chumbi Valley, but I omitted to procure any specimens.

27. Microcichla scouleri.

Microcichla scouleri (Vig.); Oates, Faun. Brit. Ind., Birds, ii. p. 88; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 55.

This Forktail was rather common in the Chumbi Valley, occurring up to very high altitudes: I omitted to prepare any specimens. It does not occur in Tibet north of the Himalayas—at least, in the part of the country that we visited.

28. Ruticilla frontalis.

Ruticilla frontalis (Vig.); Oates, Faun. Brit. Ind., Birds, ii. p. 91; Sharpe, Sci. Result. Yark. Miss., Aves, p. 86; Oust., N. Arch. Mus. (3) v. p. 159; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 94.

Nos. 1819. ♂; 1820. ♂; 1821. ♂. Lamteng, Sikhim, 9000 feet, Dec. 21, 1903. Bill black, gape yellow; feet black; iris dark brown.

Nos. 1839. ♂; 1840. ♀. Nyema, Sikhim, 8000 feet, Dec. 30, 1903.

Tolerably common in Sikhim in December: I did not see it in the Chumbi Valley or elsewhere in Tibet.

29. Ruticilla schisticeps.

Ruticilla schisticeps Hodgs.; Oates, Faun. Brit. Ind., Birds, ii. p. 92; Oust., N. Arch. Mus. (3) v. p. 161; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 93.

Nos. 1844. ♂ adult; 1845. ♀ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 16, 1904. Bill and feet black; iris dark brown.

No. 1850. ♂ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 19, 1904.

I found this Redstart rather common in the Chumbi Valley in January. At the same time of year, at corresponding elevations in the next (Sikhim) valley, this species was replaced by *R. frontalis*.

30. RUTICILLA HODGSONI.

Ruticilla hodgsoni Moore; Oates, Faun. Brit. Ind., Birds, ii. p. 95; Oust., N. Arch. Mus. (3) v. p. 155; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 92.

Nos. 1734. ♀ adult; 1748. ♀ adult; 1755. ♂ adult. Khamba Jong, 15,200 feet, Oct. 7–31, 1903.

No. 1822. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 21, 1903.

Nos. 1910, 1938. ♂ adults; 1924, 1925, 1932, 1933. ♀ adults. Gyantse, 12,000 feet, April 19–27, 1904.

No. 1973. ♂ adult. Gyantse, 12,000 feet, July 8, 1904.

No. 1992. ♂ adult. Chaksam, Brahmapoutra (Tsang Po) River, 12,000 feet, July 30, 1904.

No. 1993. ♀ immature. Chaksam, Brahmapoutra (Tsang Po) River, 12,000 feet, July 30, 1904.

This species was common at Khamba Jong up to the end of October; it reappeared at Gyantse in April, and with *R. rufiventris* was very common and generally distributed during the summer. The two species are called "Ting-ting-ma" by the Tibetans.

31. RUTICILLA RUFIVENTRIS.

Ruticilla rufiventris (Vieill.); Oates, Faun. Brit. Ind., Birds, ii. p. 95; Sharpe, Sci. Result. Yark. Miss., Aves, p. 87; Oust., N. Arch. Mus. (3) v. p. 153; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 93.

a, b. ♀ adult. Khamba Jong, 15,200 feet, Sept. 1903.

Nos. 1711, 1735. ♀ adults. Khamba Jong, 15,200 feet, Oct. 3–7, 1903.

Nos. 1719, 149. ♂ adults. Khamba Jong, 15,200 feet, Oct. 4–9, 1903.

No. 1771. ♀ adult. Khamba Jong, 15,200 feet, Nov. 8, 1903.

Nos. 1930, 1931, 1941. ♂ adults. Gyantse, 12,000 feet, April 25–28, 1904.

Nos. 1953, 1954. ♂ adults. Gyantse, 12,000 feet, May 3, 1904.

No. 2034. ♀ adult. Lhasa, 12,200 feet, Sept. 2, 1904.

This Redstart occurred at the same places as *R. hodgsoni* and in about equal numbers. Both species breed in Southern Tibet: I found several nests at Gyantse early in July, when they contained young birds.

32. RUTICILLA ERYTHROGASTER.

Ruticilla erythrogaster (Güld.); Oates, Faun. Brit. Ind., Birds, ii. p. 97; Sharpe, Sci. Result. Yark. Miss., Aves, p. 88.

Ruticilla erythrogastra severtzowi Lorenz; Oust., N. Arch. Mus. (3) v. p. 157.

a. ♂ adult. Khamba Jong, 15,200 feet, Sept. 9, 1903.

Nos. 1716. ♂; 1722. ♂; 131. ♂. Khamba Jong, 15,200 feet, Oct. 4–5, 1903. Bill and feet black; iris dark brown.

Nos. 1784. ♂; 1785. ♂; 1799. ♂. Khamba Jong, 15,200 feet, Nov. 19–28, 1903.

No. 1864. ♂. Tuna, 15,000 feet, Feb. 3, 1904.

I saw and procured specimens of Güldenstadt's Redstart up to the date (December 11th) on which I left Khamba Jong. I shot a male at Tuna on February 3rd during very cold weather, when the ground was covered with snow; a few days later I observed a hen bird at the same place. After that I saw no more until the end of September, when there were a few on the road between Lhasa and the Brahmapoutra River. This species may perhaps breed in S. Tibet, but owing to our enforced confinement within camp during May and June, I was unable to satisfy myself of the fact. Unlike *R. hodgsoni* and *R. rufiventris*, Güldenstadt's Redstart does not frequent the vicinity of houses or cultivated fields. I never saw it anywhere else than in very bare, treeless, and mountainous country. It seems to realise that its plumage renders it an extremely conspicuous object, and is much more wary than the other Tibetan Redstarts.

33. CYANECULA SUECICA.

Cyanecula suecica (nec Linn.); Oates, Faun. Brit. Ind., Birds, ii. p. 99.

Cyanecula cæruleculu Sharpe, Sci. Result. Yark. Miss., Aves, p. 89.

No. 108. ♂ adult. Khamba Jong, 15,200 feet, Sept. 26, 1903. Bill black; feet very dark brown; iris dark brown.

Nos. 127. ♀; 147. ♀; 148. ♂; 1750. ♂. Khamba Jong, 15,200 feet, Oct. 4–10, 1903.

No. 2052. ♂ adult. Lhasa, 12,200 feet, Sept. 21, 1904.

The Red-spotted Blue-throat occurred at Khamba Jong in September and the early part of October, and at Lhasa during the same season of the year: it probably only passes through S. Tibet on migration.

34. CALLIOPE PECTORALIS.

Calliope pectoralis Gould; Oates, Faun. Brit. Ind., Birds, ii. p. 103; Sharpe, Sci. Result. Yark. Miss., Aves, p. 90.

No. 1725. ♀ adult. Khamba Jong, 15,200 feet, Oct. 5, 1903. Bill black; feet very dark brown; iris dark brown.

No male example of this species was obtained: it is possible that the specimen should be referred to *C. tschebaiewi.*

35. MERULA MAXIMA.

Merula maxima Seebohm; Oates, Faun. Brit. Ind., Birds. ii. p. 123; Sharpe, Sci. Result. Yark. Miss., Aves, p. 91; Oust., N. Arch. Mus. (3) v. p. 142.

No. 1851. ♂ immature. Gauthong, Chumbi Valley, 12,000 feet, Jan. 19, 1904. Bill dull yellow, tip and nasal region dusky; feet very dark brown; iris dark brown.

I only saw this species at comparatively low altitudes in the Chumbi Valley.

36. TURDUS RUFICOLLIS.

Merula ruficollis (Pall.); Oates, Faun. Brit. Ind., Birds, ii. p. 130; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 101.

Turdus ruficollis Oust., N. Arch. Mus. (3) v. p. 145.

No. 1825. ♂ immature. Lamteng, Sikhim, 9000 feet, Dec. 21, 1903. Bill blackish brown, gape and base of lower mandible dull yellow; feet greyish brown; iris dark brown.

No. 1834. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 24, 1903.

No. 1842. ♀ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 16, 1904.

No. 1905. ♂ adult. Gyantse, 12,000 feet, April 19, 1904. Bill deep yellow, tip of culmen dusky; feet dull yellowish brown; iris dark brown.

No. 1906. ♀ adult. Gyantse, 12,000 feet, April 19, 1904.

No. 1927. ♀ adult. Gyantse, 12,000 feet, April 25, 1904.

No. 1944. ♀ adult. Gyantse, 12,000 feet, April 29, 1904.

This Thrush was rather common at Gyantse for about three weeks in April, but the birds were merely passing through on migration, and they had all disappeared by the end of the month. I did not see any at Khamba Jong in the autumn of 1903. In January this species was well represented in the wooded parts of the Chumbi Valley, up to an elevation of 10,000 feet. The Tibetan name is "Dre-dre."

37. TURDUS ATRIGULARIS.

Merula atrigularis (Temm.); Oates, Faun. Brit. Ind., Birds, ii. p. 131; Sharpe, Sci. Result. Yark. Miss., Aves, p. 92.

Turdus atrigularis Oust., N. Arch. Mus. (3) v. p. 149.

No. 1824. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 21, 1903. Bill black, gape and base of lower mandible yellow; feet greyish brown; iris dark brown.

No. 1833. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 24, 1903.

This bird occurred along with *T. ruficollis* in the Chumbi Valley and at Gyantse, but in much smaller numbers. In Sikhim I found it the commoner of the two species.

38. OREOCICHLA MOLLISSIMA.

Oreocincla mollissima (Blyth); Oates, Faun. Brit. Ind., Birds, ii. p. 154.

No. 1826. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 22, 1903. Bill dull brown, gape and base of lower mandible yellow; feet yellowish fleshy; iris dark brown.

I saw a few specimens of this Thrush in Sikhim during the latter half of December, but did not come across it in the Chumbi Valley.

39. CINCLUS KASHMIRIENSIS.

Cinclus kashmiriensis Gould; Oates, Faun. Brit. Ind., Birds, ii. p. 162; Sharpe, Sci. Result. Yark. Miss., Aves, p. 96.

Cinclus cashmeriensis Oust., N. Arch. Mus. (3) v. p. 187; Berez. & Bianchi, Aves Potan. Gan-su, p. 102.

No. 1759. ♂ adult. Khamba Jong, 15,200 feet, Nov. 4, 1903. Bill black; feet dark brown; iris dark brown.

No. 1858. ♂ adult. Dhota, Chumbi Valley, 14,000 feet, Jan. 26, 1904. Feet greyish brown; iris olive-brown.

I shot a White-breasted Dipper at Khamba Jong at the beginning of November and saw another a few days later. It was common in midwinter in the Chumbi Valley up to 14,000 feet. I saw one just below Phari when the river was covered with ice a foot thick.

40. CINCLUS YOUNGHUSBANDI.

Cinclus younghusbandi Walton, Bull. Brit. Orn. Club, xv. p. 92 (July 1905).

No. 153. ♀ adult. Khamba Jong, 15,200 feet, Oct. 24, 1903. Bill and feet black; iris dark brown.

No. 1770. ♀ adult. Khamba Jong, 15,200 feet, Nov. 6, 1903. Feet dark brown.

No. 1783. ♀ adult. Khamba Jong, 15,200 feet, Nov. 19, 1903. Feet greyish brown; iris olive-brown.

Larger than *C. sordidus* as regards wing and total length.

+41. ACCENTOR RUBECULOIDES.

Tharrhaleus rubeculoides (Hodgs.); Oates, Faun. Brit. Ind., Birds, ii. p. 169; Sharpe, Sci. Result. Yark. Miss., Aves, p. 99.

Accentor rubeculoides Oust., N. Arch. Mus. (3) v. p. 168.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 9, 1903.

No. 1694. ♂ adult. Kangra Lama Pass, 17,200 feet, Sept. 23, 1903.

No. 107. ♂ adult. Khamba Jong, 15,200 feet, Sept. 26, 1903. Bill black; tarsi reddish, feet darker; iris reddish brown.

b. ♂ adult. Khamba Jong, 15,200 feet. Sept. 28, 1903.

Nos. 126, 1720, 1753. ♂ adult; 134. ♀ adult. Khamba Jong, 15,200 feet, Oct. 4–24, 1903.

No. 1773. ♂ adult. Khamba Jong, 15,200 feet, Nov. 10, 1903.

No. 1795. ♀ adult. Khamba Jong, 15,200 feet, Nov. 25, 1903.

No. 1862. ♂ adult. Phari, 14,500 feet, Jan. 27, 1904.

No. 1863. Adult. ,, ,, ,, ,,

No. 1888. ♂ adult. Tuna, 15,000 feet, March 2, 1904.

This *Accentor* was very common about all the villages and exceedingly tame. Both in appearance and in habits it bears a strong resemblance to the English Robin. It is rarely seen in quite open country. Colonel Younghusband pointed out to me at Tuna, during the winter, that the numerous individuals of this species that spent the day in our camp rested in flocks at night among rocks on the open hill-side. There was one particular spot, a small ravine about half a mile from the camp, where they congregated at dusk, arriving there singly or in twos and threes. Night after night they frequented exactly the same place. The male bird had a pleasant song, which it began to utter on sunny mornings in the middle of March. There were a few birds on the Gyantse plain in summer, but the majority evidently retire to the mountains to breed. I did not see this bird below 16,000 feet in Sikhim.

42. Accentor fulvescens.

Tharrhaleus fulvescens (Severtz.); Oates, Faun. Brit. Ind., Birds, ii. p. 171; Sharpe, Sci. Result. Yark. Miss., Aves, p. 98.

a. ♂ adult. Khamba Jong, 15,200 feet, Aug. 1904.

b. ♂ adult. „ „ Sept. 3, 1903.

Nos. 1723, 132, 150. ♂ adult; 140. ♀ adult. Khamba Jong, 15,200 feet, Oct. 5–9, 1903.

Nos. 1777, 1778. ♂ adult. Khamba Jong, 15,200 feet, Nov. 14, 1903.

No. 1922. ♀ adult. Gyantse, 12,000 feet, April 23, 1904.

No. 1958. ♂ adult. Gyantse, 12,000 feet, May 3, 1904.

There is much variation in the colour of the under parts in the series of skins in the National Collection; some are almost white, and others of all shades up to deep rufous. The palest variety occurs in the desert regions of Northern Tibet, while those from Southern Tibet and Sikhim, including my own specimens, belong to the darkest form.

This bird is very similar in its habits to *A. rubeculoides*, but appears to be less hardy. There were none at Tuna during the winter, when the other species was common. It was breeding at Gyantse in June, nesting in low willow trees. The Tibetan name is "Rib-che-ta-ta," *i. e.* Striped Hill-bird.

[To be continued.]

V.—*Notes on the Nidification of Indian Birds not mentioned in Hume's 'Nests and Eggs.'*—Part I. By E. C. Stuart Baker, F.Z.S.

In 'The Ibis' for 1895 (pp. 41, 217) and 1896 (p. 318), and in 'The Asian' of 1893 and 1894, I published notes on the breeding of sixty-nine birds not mentioned in the second edition of Hume's 'Nests and Eggs,' edited by E. W. Oates. These were the result of my own observations only, but since then a great many more nests and eggs have been discovered—a few by myself and my co-worker, Dr. H. N. Coltart, and many others by observers in Kashmir, notably by Colonel Rattray and Colonel A. E. Ward, by B. B. Osmaston in the Thun Valley, by Butler in the Andamans, by Davidson in Kanara, by Harrington in Burmah, by Bourdillon in Travancore, and by others here and there throughout the Empire. My thanks are due to all these gentlemen for allowing me to incorporate their notes in this article and also, in some instances, for adding fresh matter to that already published.

The only references given are to the 'Fauna of British India, Birds,' by E. W. Oates and Blanford, and to the publications in which the original descriptions have appeared.

The abbreviations used are as follows:—

Bombay Natural History Society's Journal = B. N. H. S. J.
Blanford's 'Fauna of British India, Birds' = F. B. Ind.

The numbers are in continuation of my last article in 'The Ibis' (1896, p. 318).

DENDROCITTA FRONTALIS.

Blanford, F. B. Ind. i. p. 33; Stuart Baker, B. N. H. S. J. vii. p. 166; id. Ibis, 1893, p. 41.

The Black-browed Magpie breeds freely in Dibrugarh from the foot of the hills upwards; it commences laying its eggs as early as the end of March and continues as late as the middle of June. We find that in this (Lakhimpur) district, at an elevation of three or four hundred feet, birds breed in great numbers which are not found doing so elsewhere under three thousand feet. The climate is, of course, very cool and the nearness of the snow-line keeps birds much lower than where it is further off.

70. CYPSIRHINA CUCULLATA.

Blanford, F. B. Ind. i. p. 35; Harrington, B. N. H. S. J. xvi. p. 168.

I can find no record of the breeding of the Hooded Racket-tailed Magpie, but Captain H. H. Harrington has been so good as to send me eggs, together with a brief note, from which it would appear that its nidification does not differ from that of *C. varians*.

Captain Harrington writes: "I was unfortunately laid up when the birds were breeding, but had marked down a bit of jungle in which they were plentiful, and the head man of an adjacent village was sent out to collect the eggs for me (I gave him a skin and also the Burman name for the bird). The men sent in two nests with the branches complete and some eggs.

"The nests were very neatly made in some thorny tree with a thorny foundation, and the sides extended slightly beyond the lips of the nests proper: very like miniature nests of *Pica rustica* inverted. The interior was very like a flimsy Bulbul's. There can be no doubt as to the eggs, which are unlike any others that I have found in the district and which have a distinctly Corvine look about them."

The two eggs sent to me by Captain Harrington are typical small eggs of *Dendrocitta*, and the only eggs they could be other than those of *C. cucullata* are those of *C. varians*, which does not breed in the vicinity.

In shape they are broad obtuse ovals; of a pale dull green-grey ground-colour, profusely spotted and blotched with light brown, and with secondary underlying purple-grey markings. At the larger end these coalesce, forming a cap in one egg, but in the other not much more thickly grouped there than elsewhere. The texture is decidedly coarse and the shell very stout in proportion to the size of the eggs. There is hardly any gloss.

The two eggs measure ·87″ by ·66″ and ·85″ by ·67″.

Both nests were taken in May, 1904.

In the Bombay Journal Captain Harrington describes his eggs as grey-stone in ground-colour with olive spots. His eggs are considerably larger than the pair sent to me, being about ·95″ by ·7″.

An egg sent by Captain Harrington to Dr. Coltart agrees exactly with those sent to me.

71. LOPHOPHANES DICHROUS.

Blanford, F. B. Ind. i. p. 59; Osmaston, B. N. H. S. J. ix. p. 192; id. ibid. xiii. p. 542.

Mr. Osmaston discovered this small Tit breeding in the upper valley of the Tons River above Chakrata at an altitude of some 8000 feet.

He thus describes the nest:—"On May the 1st I saw a strange Tit come out of a small round hole in the dead branch of a wild cherry-tree. I shot the bird, which proved to be a Brown-crested Tit (*Lophophanes dichrous*), and investigated the hole, which was at a height of about ten feet from the ground. On breaking off the branch just below the cavity I discovered to my regret that the nest contained four freshly hatched young. It was placed at the bottom of the hole (about nine inches deep) and reminded me much of that of the European Crested Tit, the cavity having apparently been excavated by the birds themselves, as is often the case with the latter species. The materials were moss below, then a quantity of fine hair (probably rats') above, and a lining of the same material with the addition of a few *monal* feathers, apparently for ornamental purposes."

In 1900 Mr. Osmaston obtained a nest in the same valley, but higher up, at 9300 feet, containing five eggs. These he describes as being "white, spotted and blotched fairly thickly all over with chestnut markings." The nest was of the same description as that previously described.

72. Paradoxornis guttaticollis.

Blanford, F. B. Ind. i. p. 52; Stuart Baker, B. N. H. S. J. xiii. p. 400; Harrington, ibid. xiv. p. 596.

I found this bird breeding in North Cachar, but it was extremely rare and I only took about four nests. In that district I never met with it below 2000 feet and it bred between 3000 and 4000 feet.

The nests are deep cups, measuring about 3½ inches in depth and the same in diameter. They are very typical of the subfamily, being made almost entirely of the bright yellow bark of a kind of grass and lined with yellowish strips of grasses and bamboo-leaves, so that, as a whole, they appear bright yellow. Rarely I have seen them lined with very fine dark-coloured grasses: though the first I ever saw, taken at Gungong on the 27th of April, 1895, was lined thus. They were very neat and compact, as are all those of the Paradoxornithinæ. In Lakhimpur Dr. Coltart and I have obtained three nests from the foot-hills beyond Margherita.

As a rule, the nests appear to be placed from three to six feet above the ground in a clump of bamboos, but now and then they are in a straggling shrub or a tall stout weed. Little attempt seems to be made at concealment, and those I have seen *in situ* were conspicuous at some distance; attention was drawn to them by the fussy behaviour of the parent birds, who swear loudly when the intruder approaches, before they finally go off bleating into the jungle round about.

The eggs appear to be either two or three in number, so far as my experience goes, but it may be also that, like their nearest relations, they sometimes lay four. I have seen two- and three-egg clutches hard-set.

The first pair of eggs obtained were of a dead, glossless white, sparsely speckled with tiny dots of light brown and subordinate markings of a pale neutral tint.

A pair taken on April 2nd, 1898, also hard-set, were exactly similar, but had no secondary spots.

A third and fourth clutch taken this year, 1904, in April, at Guilang, North Cachar, are quite different: in both of these clutches the ground-colour is pale clear green-grey. In one there are very numerous, but, for the greater part, very faint, blotches and smudges of sepia and brown, with underlying, yet more definite, spots of lavender. There are also a few scrawly lines of dark brown, very fine indeed, but as long as $\frac{1}{4}$ inch. The second clutch is similar, but all kinds of markings are much more numerous and decidedly darker, some of the smaller blotches and the centres of the others being of a dark umber-brown.

The shell is extremely fragile, though the texture is neither fine nor close. In shape the eggs are generally broad blunt ovals, a few are somewhat lengthened, but I have seen none pointed or narrow. They vary in length between ·95″ and ·81″ and in breadth between ·65″ and ·61″, the average of 13 eggs which I have recorded being ·93″ by ·63″.

Capt. Harrington took a nest of this Crow-Tit at Taunygyi, Shan States, at 5000 feet. The three eggs agree in description with those taken by myself, but are very small, only ·75″ by ·64″.

73. DRYONASTES CHINENSIS.

Blanford, F. B. Ind. i. p. 61; Harrington, B. N. H. S. J. xiv. p. 597.

Capt. Harrington has taken the nest of this bird in the Shan States. He thus records the discovery:—"At Ganguoi (5000 feet) on the 1st of May I found a nest of this bird placed in a small tree about nine feet up. I was unable to shoot the bird, as it sat for some time on the edge of the nest just above my head and then got away. The nest was exactly like that of the next species" (*D. sannio*): "three eggs, measuring 1·04″ by ·79″, glossy white."

74. DRYONASTES NUCHALIS.

Blanford, F. B. Ind. i. p. 63; Coltart, B. N. H. S. J. xv. p. 609.

Ogle's Laughing-Thrush is found in fair numbers along the foot of the hills from Sadiya on the north of the Brahmaputra to the Naga Hills on the south bank. How high up it extends we do not know, but the Nagas say that it is not a bird of high altitudes. It is nowhere common, and, though for five years we have worked the district, Dr. Coltart and I have not succeeded in obtaining a dozen nests, and most of these have been brought in by Nagas living in villages at from 2000 to 2500 feet elevation. It appears to be a far less noisy and obtrusive bird than *D. ruficollis* and others of the genus, to be an even greater skulker, and to go in smaller parties.

The nest is a rather bulky structure, measuring externally from 6″ to 7·5″ in diameter by about 4½″ in depth and internally about 4″ by 3″ in depth. Almost any material is used for the body of the nest, such as bamboo-leaves, other dead leaves, grass, small twigs, and bents, and all these are bound together with tendrils, fern-roots, climbing plants, and pliant stems of weeds. Moss seems to be seldom, if ever, used in its construction. It is fairly compactly put together, but the materials seem often to be much sodden and so rotten that they will hardly stand handling. The lining, which is scanty, is formed of fine grasses and fibres. The nest, so far as we know at present, is always placed in scrub-jungle, in some bush from two to four feet from the ground. It is usually well hidden, and the bush selected is generally thick and well covered with foliage.

The eggs seem to be either two or three in number, and more often the former than the latter.

They are in colour pale blue-green, like the palest type of eggs of *Garrulax moniliger* or *G. pectoralis*, a little darker on average than those of *Dryonastes ruficollis* or *D. sannio*. The texture is as in the latter: the shell equally hard, close, and smooth, but less glossy, though much more so than in eggs of the genus *Garrulax*. The shape is a very regular oval, a few eggs being rather lengthened and pointed.

Dr. Coltart's eggs and mine average 1·15″ by ·83″ and vary in size between 1·08″ by ·76″ and 1·24″ by ·87″.

We have had eggs taken or brought to us in the last few days of March, in April, May, and early June.

I found a nest with young and another with two fresh eggs on the 8th of June, in some scrub-jungle just outside the Military Lines at Sadiya.

DRYONASTES SANNIO.

Eggs of this species sent to me by Captain Harrington from the Shan States are quite as glossy as some that I have of *D. ruficollis*, and more so than any of my eggs of *D. sannio* taken in North Cachar.

75. GARRULAX DELESSERTI.

Blanford, F. B. Ind. i. p. 82; Davidson, B. N. H. S. J. xi. p. 655; Ferguson, ibid. xv. p. 257.

As regards the breeding of this bird we have two accounts which are rather conflicting. Mr. J. Davidson, writing of certain birds in Kanara, says of the nest of this species :—

"I obtained a nest in the latter part of May. It was in a low-bush thick jungle, and was like an ordinary small Bulbul's nest composed of rough creepers and roots, with a couple of skeleton leaves in the foundation. It contained a single partially incubated egg: this was pure white and glossy, and a very broad oval." Mr. Ferguson, quoting Mr. Bourdillon, describes the eggs as "very glossy blue eggs, indistinguishable from those of *Crateropus griseus*." The nest was a deep cup, composed of grass-roots and fine stems of grass, and was placed in a tuft of grass four feet from the ground.

76. TROCHALOPTERUM AFFINE.

Blanford, F. B. Ind. i. p. 89; Osmaston, B. N. H. S. J. xiv. p. 815.

I have a single egg of this species which was taken by Mr. B. B. Osmaston at Darjeeling, at an elevation of 11,500 feet, on the 10th of June, 1903. The colour is that of an ordinary Thrush's egg, blue-green, and there are a few spots and specks of dark brown, mostly confined to a ring round the larger end. Some of the specks are so dark as to appear black when casually looked at. With the exception of a few very fine lines about a tenth of an inch or less in length, there are none of the scrawly lines so typical of the spotted eggs of *Trochalopterum*.

In shape the egg is a long oval, considerably smaller at one end than the other, and also more pointed than is usual in this subfamily. The texture is like that of the other spotted eggs of this genus—close and fine, but not very hard.

It measures 1·21″ by ·82″.

The nests are described by Mr. Osmaston as being "rather massive, but neat cups, about 8 inches in external diameter, and composed of moss, then twigs and dry grass-stems, lined copiously with the black rhizomorph of a fungus (these resembling black roots) mixed with some birch-bark paper."

The three nests were all found at an elevation of over

11,000 feet on the Singalila Ridge between Sikhim and Nepal, and were placed in rhododendron and viburnum bushes from five to eight feet from the ground. Two eggs seem to be the full complement laid, and those of Mr. Osmaston averaged 1·15″ by ·82″.

77. Argya longirostris.

Blanford, F. B. Ind. i. p. 109.

This bird is such a skulker that it probably appears to be even more rare than it is; so far, however, I have succeeded in taking only one nest and have had two others with single eggs brought to me.

The nest found by myself was a very deep cup, the internal depth exceeding the diameter by over an inch, the dimensions being internally about 3½″ deep by about 2·4″ across: externally it was 4·2″ deep by 3·2″ across the top. It was placed about a foot from the ground in a low thorny bush growing in thatching-grass, my attention being drawn to it by the parent bird leaving it as I approached. The materials consisted of leaves, scraps of grass-blades, stems of plants, and a few twigs, the whole being bound together with fibres, roots of ferns, and long pliant weed-stems, and lined with fine dark grasses and fern-roots. The lining was neat, but the outer part of the nest was decidedly rough, especially where the materials were wound round the twigs which supported it. It contained three eggs, very hard-set, of the usual *Argya* and *Crateropus* type, *i. e.*, of a rather deeper blue than those of the Hedge-Sparrow, the texture being very fine and close and decidedly glossy. In shape they were broad ovals, very nearly elliptical, and measured ·88″ by ·7″, ·86″ by ·69″, and ·86″ by 69″.

Another nest brought to me with a single egg was much the same as the former and was taken in the same kind of situation. The egg was decidedly paler and less glossy and also rather larger, measuring ·91″ by ·72″. It was somewhat less elliptical, one end being decidedly smaller than the other. The third nest and the egg it contained were facsimiles in appearance of those first described, but the nest was said to have been taken from a clump of aloes about two feet from the ground. It was wedged in amongst the bases of the leaves and quite hidden by the tufts of grass which grew round the plants.

The nests were taken on May 8th, 1901, May 18th, 1903, and June 4th, 1904. The eggs in the last case were quite fresh.

78. POMATORHINUS NUCHALIS.

Harrington, B. N. H. S. J. xv. p. 519; Blanford, F. B. Ind. i. p. 117.

The only record of this bird's breeding is that of Captain Harrington, *loc. cit.*:—"On the 6th of May, 1902, at Lorlem, S. Shan States, I found a Scimitar-Babbler's nest containing three eggs. The bird unfortunately escaped, and deserted the nest, not coming back the next day. On a subsequent visit to Lorlem I managed to shoot a *Pomatorhinus* within a quarter of a mile of the same spot. I forwarded the skin to E. C. Stuart Baker, who kindly identified it for me as *P. nuchalis.* As it is highly improbable that either *P. schisticeps* or *P. olivaceus* inhabit the same jungle, I think it is safe to record the nesting as that of *P. nuchalis.* The nest was cup-shaped, composed of grass- and leaf-stems, and placed in a bush about two feet from the ground. The eggs, three in number (incubated), were glossy white and measure about 1″ by ·72″."

All that can be said about these eggs is that they were *probably* those of *P. nuchalis*, but I have found *P. schisticeps, P. ferruginosus,* and others all breeding within a radius of a hundred yards, so that no actual certainty can exist about them.

79. POMATORHINUS AUSTENI.

Blanford, F. B. Ind. i. p. 123; Stuart Baker, B. N. H. S. J. xiii. p. 402.

I recorded in the journal cited above the first nest I ever took of this bird. It was composed of very coarse grass-stems, roots, and bents, lined with finer and darker-coloured materials of the same kind, and covered all over outside with a mass of dead yellow bamboo-leaves, grass-blades, and few dead leaves of other kinds. The nest was rather more compact and better put together than is usual with those of Scimitar-Babblers, but it was very untidy, ending everywhere and anywhere, with no attempt to finish off. It was in shape a very deep cup, measuring externally about 8½ inches in depth by about 6 inches in width near the base, whence it narrowed off towards the top, where it was about 4½ inches. Internally the cup was about 7 inches deep by about 4 inches in diameter.

The nest was built in mixed scrub- and tree-jungle, being placed at the foot of a bush among a quantity of fallen leaves and rubbish.

It contained five eggs of the usual Scimitar-Babbler type, pure white, of a fine silky texture, very smooth, but only slightly glossed and rather fragile for their size. These eggs average ·92″ by ·68″. This nest was taken in the vicinity of Hungrum, on a peak about 6000 feet high, on the 26th of June, 1899.

Two other nests were found at later dates in North Cachar under much the same circumstances, but each contained three hard-set eggs.

In size the few eggs which have passed through my hands vary between ·89″ and ·93″ in length and between ·65″ and ·69″ in breadth.

80. POMATORHINUS STENORHYNCHUS.

Blanford, F. B. Ind. i. p. 124; Stuart Baker, B. N. H. S. J. xiii. p. 401.

The Rusty-cheeked Scimitar-Babbler was extremely rare in North Cachar, and, with the exception of one which was shot, all my birds were caught on their nests, these being found on the lofty peaks about Hengmai, Hungrum, and Ninglo, all some 6000 feet in altitude. On the borders of Lakhimpur the Nagas procure them at a much lower height than this, probably about 4000 feet. They do not, however, so far as we know at present, ever actually come down into the plains even in the cold weather.

The nest is exactly like that of Austen's Scimitar-Babbler, though less well put together, and it stands little handling. It is placed either in scrub-jungle or in the small clump-bamboo which grows at great elevations on the outer hills of the Himalayas.

All the eggs that I have seen struck me at once as being very large in proportion to the size of the bird. The Rusty-cheeked and Austen's Babblers are of much the same size, yet the eggs of the former must be one-quarter as big again in bulk.

The first nest I obtained, on May 17th, 1895, contained three eggs, almost ready to be hatched, which measured 1·12″ by ·69″, 1·10″ by ·69″, and ·99″ by ·68″.

In texture &c. they are like other Scimitar-Babblers' eggs, and in shape they are long, but very obtuse, ovals.

Other eggs agree with these and measure between ·96″ and 1·13″ in length and between ·67″ and ·72″ in breadth.

The birds appear to lay in March, April, and May.

81. POMATORHINUS HYPOLEUCUS.

Blanford, F. B. Ind. i. p. 125; Stuart Baker, B. N. H. S. J. xiii. p. 423.

This species, the giant of the genus, is a bird breeding, as a rule, at low levels, generally in the broken ground and low hills at the foot of the higher ranges, but sometimes on the plains themselves, and once I took its nest and captured the hen bird in a ravine near Guilang, North Cachar, at an altitude of nearly 4000 feet.

The nest is like that of all the other members of the genus, but more bulky, more untidy, and more loosely put together than the majority. It is, I think, also more exclusively made of bamboo-leaves, these being used for the central portion of the nest as well as for the outer part. It is either a very deep cup and semi-domed, or quite globular—generally the latter, and is placed on the ground either at the foot of some clump of bamboos or amongst cane-brakes. The latter are a very favourite haunt of the bird and it was from such a spot that Mr. Charles Inglis procured me my first specimens. The bird is seldom seen, but its deep "hoot-hoot-hoot" may be heard in the early mornings and late evenings almost anywhere where these cane-brakes are plentiful.

Most of my eggs are broad, blunt ovals, but abnormal eggs are rather long and narrow, one pair in my collection being very narrow and quite sharply pointed at the larger end.

They range in size between 1·23″ by ·87″ and 1·12″ by ·74″. The average of 12 eggs is 1·20″ by ·83″.

Gampsorhynchus rufulus.

Blanford, F. B. Ind. i. p. 135; Stuart Baker, Ibis, 1895, p. 53; id. B. N. H. S. J. viii. p. 179.

The nest which I described in the 'Ibis' for 1895 must have been abnormal, as some that I have since seen were very different. On the 9th of August, 1898, I took a nest of this bird, containing four eggs, in the Laisung Valley, North Cachar, at an elevation of some 4000 feet. It was very flimsy and rough, made outwardly of dead leaves extremely carelessly fastened together with a few cobwebs, a scrap or two of moss, and one solitary twig. The thin lining was of fine grasses and the slender tendrils of a small convolvulus. Outwardly the nest was so untidy, with scraps sticking out in all directions, that it was not easy to measure, but, roughly speaking, it was about 7″ diameter one way and 5″ the other, the depth being about 2·8″. The measurements of the interior were 2·5″ by 2·8″ by 1·5″ in depth. It was built in the small fork of a straggling bush standing in dense evergreen-forest on the banks of the Laisung stream. It could be reached easily by the hand, and no particular attempt had been made to hide it. The birds, both of which seemed to be about the nest, slipped into the undergrowth I approached, but the female soon returned and was shot.

In general character the nest is much like that of some of the Shrikes, such as *Volvocivora, Graucalus,* and others, and does not give the impression of being a Babbler's nest at all.

The eggs, on the other hand, are extremely like large, broad specimens of those of *Pellorneum mandellii* and *P. ruficeps*, or, again, like very brown, finely marked eggs of *Copsychus* and *Cittacincla*.

The four eggs from the above nest were in ground-colour very pale yellow stone, and the superior markings consisted of freckles, specks, and tiny blotches of reddish brown; these were scattered fairly numerously all over the egg, but more thickly towards the larger end, where, in two eggs, they formed a pretty distinct ring and in a third an indefinite cap. The secondary markings were of the same character and distribution, but pale lavender and purple-grey in colour. In one of the eggs of this clutch the secondary markings predominated, the primary being much sparser than they were in the others; consequently it had rather a grey appearance.

All four eggs were broad ovals, having one end not much smaller than the other, with a fine close grain and a distinct gloss. The shells were extremely fragile, as might be expected, for the young were just about to be hatched.

They measured ·91″ by ·67″.

Two other eggs brought in by Nagas from the hills beyond Margherita (Assam) were exactly like the others, except that the marks were more numerous and more equally distributed all over the surface. These were taken on the 14th of April and were quite fresh. They were fragile, though not nearly so delicate as the hard-set eggs first taken, and had a rather higher gloss.

They measured ·90″ by ·68″ and were shaped exactly like those already described.

Dr. Coltart has a fine clutch which are intermediate in density of coloration between the two in my collection. They are also on average rather larger.

Only fragments of nests were brought in with these last clutches, so that I can give no description, but, judging from their remains, they agreed better with the nest described in this article than with that formerly described in the 'Ibis.'

82. DRYMOCATAPHUS ASSAMENSIS.

Blanford, F. B. Ind. i. p. 147.

This little Babbler is fairly common along the foot of the hills in the Lakhimpur district, not coming far into the plains themselves but extending well into the mountains, up to at least 4000 feet, if the Nagas are to be believed. It is a great skulker and so is very little seen, and appears to be more rare than it really is; it is generally to be observed either on or near the ground in dense scrub-jungle, but does not seem to mind much where it is as long as the cover is thick enough. It shews a distinct partiality to places which are rather damp.

We have numbers of the nests brought in to us every year by Nagas, some of whom live several days' journey from the British territory, and Dr. Coltart and I have also seen a few *in situ*.

The nests are rather massive well put together constructions of leaves, bamboo-leaves, a little moss, a few fern fronds, and sun-grass, all more or less intermingled and wound round with fern-roots, soft fibres, and pliant weed-stems. The whole forms a very deep cup, the depth exceeding the width and the top being narrower than the base; in some cases it is domed or semi-domed, having an entrance to one side.

Roughly speaking, the nests vary between 6″ and 8″ in height and between 4″ and 5″ at the base, the top part being an inch or so narrower, while the materials are nearly always dark, the few bamboo-leaves used shewing pale yellow among the rest. They are placed either quite on the ground among the roots of some bush, in a clump of bamboos or between rocks, or else on some stump or dense tangle of creepers, vines, or ferns. In the latter case they are always very well concealed by the surrounding growth; in the former they assimilate so well with the surroundings that artificial means of concealment are but little required. The favourite resort seems to be some deep nullah with steep sides covered with thick vegetation, having a more or less rocky floor and some hill-stream or streamlet flowing along the bottom.

Either three or four seem to be the full complement of eggs laid, the former far more often than the latter, and two eggs much incubated may often be met with.

The eggs differ from those of *D. tickelli* only in being, on the whole, smaller and rather greener on average in the tone of their coloration.

The range of variation is extremely small and the following description of three clutches covers all the normal varieties.

1. Ground-colour a pale clear green, more decidedly green than the green-blue of a Thrush's egg and also rather paler. The markings consist of very numerous, but very faint, grey-brown freckles and tiny blotches distributed equally all over the egg. The general impression of colour conveyed by this clutch is pale sea-green.

2. In the next the ground-colour is the same, but the markings are rather bolder, decidedly darker and browner or less grey, so that the general effect is that of a brown-green egg, matched in this respect by some densely covered eggs of *Copsychus* and *Cittacincla.*

3. The third type is an exaggeration of the last. The ground-colour has, perhaps, more of a brown tint in it, or, I should say, it is less bright green than in either of the preceding, the markings are more numerous, more confluent, and more distinctly brown, and the impression given is that of a brown egg.

In one egg in my collection the markings consist in part of fine bold blotches with wide clear interspaces of the green ground-colour; they are principally confined to the larger end, but are fairly numerous throughout. In this egg, as in all the rest, secondary marks do not exist.

In shape the eggs vary as little as they do in coloration. Typically they are rather broad ovals but little compressed towards the smaller end, which is blunt. Abnormal eggs tend towards a rather pointed oval and sometimes to an elliptical shape, but either form is very rare, especially the former. I have seen no egg, out of, perhaps, a hundred which have passed through my hands, which could really be called pointed.

The texture is fine and close, but the extent of gloss varies greatly and seems to be most highly developed in the palest type of egg and least in the brownest, where in some cases it is practically absent. The shell is decidedly stout for so small an egg.

Eighty eggs in my collection and that of Dr. Coltart average in size ·78″ by ·57″, and vary between ·75″ and ·82″ in length and between ·55″ and ·61″ in breadth.

The birds are early breeders, laying principally in the last few days of March, in April, and early May; but they continue to nest in June and July, and I have one clutch of eggs from Dr. Coltart taken on the 14th of August. It is possible, therefore, that this species has two broods in the year, though I do not think that such is often the case in the family Crateropodidæ.

83. THRINGORHINA OGLII.

Blanford, F. B. Ind. i. p. 156.

This extremely rare Babbler was for a very great many years known only from the type-specimens obtained by Godwin-Austen near Sadiya in this district. In 1901, however, Dr. Coltart procured two specimens through a tribe of Nagas living some days' journey from our boundaries, where the mountains rise to a height of about 9000 feet. Since then we have yearly, by means of bribes and presents, induced the Nagas to hunt for them; but they must be very rare everywhere, for, in spite of all our offers, we can get but one or two birds each season. There are now two pairs in the Tring Museum, one pair in the Asiatic Museum, and besides these only those retained by Dr. Coltart and myself.

In 1902, on the 9th of May, Dr. Coltart had the nest of this bird brought in by some of his Naga collectors, together with one parent and four eggs. This he most generously made over to me. Since then we have had four other nests brought in, each time with one of the parent birds, and all of them agree well together, so that, although we have never seen the nest *in situ*, there is little chance of our having been deceived in the matter.

The nest, so far as we could gather from the remains brought in—one was in a fairly complete condition—and from what the Nagas tell us, is a very bulky affair, more like the nests of the *Pomatorhini* than those of any other birds, but it differs in having twigs, leaves, and a few other materials mixed with the grass and bamboo-leaves of which it is mainly composed. It appears to be globular in shape, having the entrance near the bottom on one side, and, according to the collectors, is placed on the ground.

The eggs could not, I think, be discriminated from small specimens of those of the Pomatorhine Babblers. They are pure white, very smooth and fine in texture, and decidedly fragile—more so, perhaps, than are Pomatorhine eggs of corresponding size. They have a faint gloss, rather more developed in some specimens than in others, but in none of them very highly.

My eggs are broad ovals in shape, three with the small end very little smaller than the other and very blunt, and the fourth with the small end rather compressed and pointed. They measure ·91″ by ·62″, ·88″ by ·65″, ·86″ by ·63″, and ·83″ by ·62″.

From what we know of the bird at present, it probably breeds in May and early June in the valleys of the higher mountains. Godwin-Austen seems to have discovered it on Manbhoon Tila, a mountain of some 10,000 feet in height on the north of the Brahmaputra; but from what we can learn it haunts the valleys between the lofty ranges, not ascending the mountains themselves, and probably seldom extending above 5000 feet. It is said to breed in forest ravines and to have a chucking call like that of the Laughing-Thrushes, but not to go about in flocks.

84. RHOPOCICHLA BOURDILLONI.

Blanford, F. B. Ind. i. p. 161; Ferguson, B. N. H. S. J. xv. p. 260.

Mr. Ferguson, quoting Mr. T. F. Bourdillon, records:—"I once had the nest of this bird brought to me with the bird itself, and have since twice taken the nest myself. In the last instance the nest was placed within two feet of the ground, and was a domed structure not unlike that of *Ochromela nigrorufa*, but, in addition to the exterior frame of woven *eorul* leaves, there was a lining of very fine roots. Both nests contained a couple of eggs, one pair being slightly incubated. The bird builds at rather high elevations, viz. from 2000 feet to the summit of the hills, and prefers the outskirts of the forests, unlike *A. phæocephala*, which always builds far in. The breeding-season is from March to May. The eggs are white, sparingly spotted with purplish brown over most of the surface, but at the top the spots form a zone.

"Size 0·75″ by 0·52″."

Mr. Bourdillon has kindly given me an egg of this species, which is now in my collection. It is of the same type as that of *R. atriceps* and agrees well with Mr. Bourdillon's description. The ground is white, but not very pure, and the markings consist of small blotches, freckles, and spots of light purplish brown, here and there with a reddish tinge in them. These markings are scattered all over the egg, but are more numerous at the larger end, especially so in the case of a zone. There are a few secondary marks of pale purple-grey.

The egg is a rather long, blunt oval, very little compressed towards the smaller end.

It measures ·76″ by ·52″.

85. SCHŒNIPARUS RUFIGULARIS.

Blanford, F. B. Ind. i. p. 170.

The Red-throated Tit-Babbler is fairly common from the level of the plains, *i. e.* some 500–700 feet, up to about 3000 feet or perhaps higher, throughout the foot-hills of the Himalayas, north and south of Assam.

Throughout this range it appears to breed at all heights, but so far the nest has only been taken by Dr. Coltart and myself or our collectors.

The nest is like that of *Schœniparus mandellii* described by me on pp. 60-62 of 'The Ibis' for 1895. In shape it is a rather pointed oval, like an egg set up slanting on its larger end, the entrance being just to one side of the top. It is composed principally of grass, much mixed with leaves, twigs (always small and pliant), weeds, and other similar materials. The lining is always of finer grasses, moss, and fern-roots, or a fine fibrous material made from the inner bark of trees, and forms a cup fairly distinct from the rest of the nest. It is stout and pretty well put together, the walls averaging over an inch thick, and the outer dimensions of the nest being about 4 inches broad by about 5⅓ to 6 inches high. It is placed, as a rule, actually on the ground, and the few examples that I have myself seen have all been in such a position with one exception. This was placed against a rotten stump, well covered with ferns, moss, and orchids, about two feet from the ground. It was in a garden and the tree-stump was standing practically alone, except for a single thick Croton bush just in front of it. It was, however, beautifully concealed and was only found accidentally by the owner of the garden in searching for a tennis-ball.

As a rule, the nest is built in scrub-jungle on the sides of nullahs and ravines; but I do not think that it is confined to any kind of jungle or position, though it requires good shelter, yet not too dense.

The eggs number three or four in a clutch, but the latter number is not found more often than, perhaps, once in five times, and sometimes two eggs are found incubated.

The eggs are distinctly like those of *Schœniparus mandellii*, so much so, indeed, that when Dr. Coltart first found a nest of this species, but failed to get the parent bird, I had not the slightest difficulty in naming them. Unlike the eggs of *S. mandellii*, however, which vary a good deal in coloration, those of *S. rufigularis* are remarkably constant, and the following three clutches taken from my own collection nearly cover the extremes of variation.

No. 1 is a typical clutch of three eggs, matched by four out of any five clutches taken. The ground-colour is pale yellow-stone with just the faintest imaginable tinge of green in it; the markings consist of clouds, blotches, and spots of pale vandyke-brown, many of them looking as if half washed out. Above these are a few spots, specks, and scrawly lines of deep vandyke-brown, often surrounded by paler blotches, as if by a nimbus; under all these are a few blotches and a good many spots of pale lavender. As a rule, the markings are fairly numerous everywhere, but more so towards the larger end, not, however, forming anything like a ring or cap.

No. 2 is similar, but shews no green tinge, and the markings consist almost entirely of brown blotches, whilst the spots, specks, and lines are very few in proportion and the underlying grey markings quite subordinate, so that the whole egg gives a more dull brown impression than do the others. Even in this clutch of four, one egg is more like the first-described clutch than the other three, and looks as if it ought to have been laid by a different bird.

In No. 3 the ground-colour has the green tinge more strongly developed, the lines are entirely absent, and the dark brown spots are only two or three on each egg. The other markings consist of grey-brown or olive-brown freckles and small blotches, much mixed with the secondary grey blotches, so that the total effect of the egg is grey-green.

All my eggs are of the same shape, viz., rather broad ovals with well-defined, but obtuse, smaller ends. They may vary to a certain extent in comparative width, length, or compression of the smaller end, but I have seen no egg that I could call in any way abnormal.

One hundred eggs vary in size as follows: in length between ·70″ and ·80″ and in breadth between ·51″ and ·57″, the average of the same number being ·70″ by ·54″.

86. RIMATOR MALACOPTILUS.

Blanford, F. B. Ind. i. p. 175; Stuart Baker, B. N. H. S. J. xiii. p. 404; de Nicéville, ibid. p. 531.

Two most conflicting accounts of this bird's nesting were published in the same number of the 'Bombay Natural History Journal,' one by Mr. de Nicéville (quoting Mr. Masson) and one by myself.

The former wrote :—"The nest contained three eggs, was of the same shape and size as that of *Rhipidura albicollis* (Vieill.), the White-throated Fantail Flycatcher, Blanford's No. 605, and was made entirely of fine grass without any lining; it was fixed in the fork of the branch of a shrub. The eggs were small, light blue, and without spots." According to this account, therefore, the nest and eggs are exactly like those of *Zosterops*, a bird about one-quarter to one-third the bulk of *Rimator*, which is a larger form than its nearest allies *Corythocichla* and *Turdinulus*. My description of the nest and eggs which had been brought to me by a Naga, together with one of the parents, was as follows :—"The nest is an ill-formed globe of dead leaves, grasses, a few old fern-fronds and bents, very loosely interwoven and lined with more dead leaves, the colour of all the material being of a dark or blackish brown. In height the nest is about 8½″, while at its widest part, close to the base, it is about 6″ across. The entrance, high up near the top, is about 2″ in diameter."

The eggs were four in number and very hard-set, but just able to be blown. The ground-colour was very faint pinky white, the pink having a sienna tinge. The markings, rather profuse at the larger end, though sparse elsewhere, consisted of small points and blotches of reddish brown, mostly surrounded by a pale washed-out shade of the same, looking as if the colour had run. Here and there also were a few scrawly and entangled lines of very deep red-brown. The markings formed ill-defined caps or rings at the larger ends.

"In shape the eggs were very regular ovals, neither particularly long nor broad in proportion to their size. The surface was not very smooth, but had a very faint gloss, and the texture was fine and close.

"The nest was placed on the ground among the dead leaves and other rubbish at the foot of a large tree standing in a forest composed principally of small trees, and having a dense undergrowth of Begonia, bracken, and miscellaneous green bushes. It was taken on the 24th of June on a peak near Hungrum, at about 6000 feet elevation."

To this I can only add the size of the eggs, which are: ·84″ by ·60″, ·85″ by ·61″, ·82″ by ·61″, and ·81″ by ·62″.

Mr. de Nicéville in forwarding Mr. Masson's letters authorized me to quote from them, and in one Mr. Masson wrote that he had watched the bird build the nest, had waited until the hen had laid three eggs, and had then shot the pair of birds and taken the nest and eggs. This is, of course, very strong evidence, far stronger than any that I can produce, mine being only to the effect that a Naga told me that he had caught the accompanying bird on the nest. I felt certain, however, and still do so, that no bird of the *Rimator* group would ever make the sort of nest Mr. Masson describes or could lay the eggs mentioned. His eggs were taken at Darjeeling at between 4000 and 6000 feet.

When at home in 1902 I found that the British Museum possessed a clutch of eggs said to be those of *Rimator*, which had been collected by Mr. Gammie at Darjeeling and corresponded with mine in size, coloration, and every other detail. Still, Mr. Masson, who is a keen oologist, is so absolutely certain of his identification that his description cannot be passed over in silence, though I have no doubt, personally, that he made a mistake either in the birds themselves or in the identification of the owners of the nest taken.

87. Turdinulus roberti.

Blanford, F. B. Ind. i. p. 176, iv. p. 480; Stuart Baker, B. N. H. S. J. xiii. p. 403.

Under the name of *Corythocichla squamata* I described as new (B. N. H. S. J. xiii. p. 403) a small Babbler with a pure white chin and throat having three well-defined lines of bold specks radiating from the chin. On the appearance of the fourth volume of Blanford's work, however, I saw that my bird was nothing but the true *Turdinulus roberti*, Blanford's description having been a compromise between that and *T. exsul*.

Roberts's Babbler is to be found in some numbers, though nowhere, I imagine, commonly, in the higher ranges bordering on the plains of Assam. The nest and eggs are exact counterparts of those of *Corythocichla striata* in everything but size. I described at length the nidification of *Corythocichla* on p. 53 of 'The Ibis' for 1895, and it is unnecessary to add more here.

Three seems to be the ordinary number of eggs laid, though sometimes as many as four are found, and about equally often only two.

My eggs average ·71″ by ·56″, and vary in length between ·80″ and ·67″ and in breadth between ·53″ and ·58″. Abnormal eggs seem to tend towards a lengthened oval shape, considerably compressed towards the smaller end, which is always blunt.

88. LARVIVORA BRUNNEA.

Blanford, F. B. Ind. i. p. 182; Osmaston, B. N. H. S. J. xi. p. 71.

The description of the nidification of this bird, as given in Hume's 'Nests and Eggs' (vol. i. p. 127), is, as is now well known, erroneous. The eggs are, of course, pale blue, quite unspotted, and have been taken by Davidson, Rattray, Wilson, Buchanan, Ward, and many others in Cashmere and other parts of the Himalayas.

The nest is a cup, rather bulky for the size of the bird, and is generally placed on a bank or some sloping piece of ground, but often on the bank bordering a well-used footpath. The full complement of eggs is almost invariably four, and they are, as already mentioned, uniform pale blue, varying in shade from a rather deeper tint than that of a Hedge-Sparrow's to that of the palest laid by a Starling. The texture is very smooth and fine, but not particularly hard or close. There is generally a certain amount of gloss. In shape the eggs are a very regular oval, but little compressed towards the smaller end, and sometimes almost elliptical. My eggs and those which I have seen from other collectors vary in length between ·7″ and ·78″, and in breadth between ·55″ and ·6″. Osmaston's eggs are a good deal larger, averaging ·80″ by ·60″ and varying between ·84″ by ·60″ and ·78″ by 58″.

This nest is a very favourite place for *Cuculus micropterus* to lay its eggs in.

89. HODGSONIUS PHŒNICUROIDES.

Blanford, F. B. Ind. i. p. 190; Osmaston, B. N. H. S. J. xi. p. 67.

Though I have never seen a nest of this bird, I have eggs in my collection taken by Davidson in Cashmere, where they have been also found by numerous other collectors. They are deep blue, considerably darker than any other blue eggs that I know, except those of *Garrulax albigularis*, and are without spots.

Osmaston gives the following description of the nests which he found. He says of the bird:—"It is very common in the Tons Valley at elevations of from 10,000 to 11,000 feet, but is rarely seen owing to its being of shy and retiring habits. I found twelve nests between June 5th and 11th, all of which contained either two or three eggs, mostly fresh, and three seems to be the normal complement. They were placed in low bushes from one to three feet from the ground in open scrub-forest. They were deeply cup-shaped, composed of brown grass without, and lined with finer grasses. The eggs are of a pure dark blue, about intermediate in shade between those of *Crateropus canorus* and *Garrulax albigularis*, and give the following measurements:—

"Largest egg ·89″ by ·63″; smallest egg ·80″ by ·58″. Average of 7 eggs ·85″ by ·61″."

My eggs agree well with these, but average larger, viz. ·91″ by ·6″. In shape they are long ovals, well compressed towards, and pointed at, the smaller end. The texture is very smooth, fine, and close, and there is a certain amount of gloss. The shell is medium, neither stout nor thin.

The internal colouring is paler than the external.

The birds breed from the beginning of June to the middle of July.

90. OLIGURA CASTANEICORONATA.

Blanford, F. B. Ind. i. p. 193; Osmaston, B. N. H. S. J. xv. p. 511.

The eggs of this little Short-wing have been taken both by Mr. B. B. Osmaston and by Mr. Charles Inglis in Sikhim. They agree with Hodgson's figures and description, and Jerdon's supposed eggs of this species must have belonged to some other.

Hume's remark ('Nests and Eggs,' i. p. 132) that the eggs are "apparently something like a *Prinia's*" is most misleading, as no eggs could well be more unlike. Whereas the texture of the eggs in *Prinia* is hard, close-grained, and exceedingly glossy, that in *Oligura* is soft, not very close, and not highly, if at all, glossed. *Prinia's* red eggs incline to a decidedly spherical ovoid, whereas *Oligura* lays an egg which is a rather long oval, somewhat compressed towards the smaller end. In fact, the type of egg is just what we should expect that of *Tesia* to be. It is, however, much more richly coloured than the richest egg that I have ever taken of that bird. Two eggs in my collection, which I owe to the generosity of Mr. Charles Inglis, are in ground-colour beautiful pink-brick, and the markings consist of numerous darker brick-red specks and freckles forming a dense ring about the larger end, but gradually decreasing in number towards the smaller. Inside the ring the markings are very numerous.

My eggs measure ·71″ by ·48″.

Mr. Osmaston describes his eggs as "Long ovals, with little gloss, of an almost uniform dark terracotta or dull chestnut colour, duller and less uniform than the eggs of a *Prinia*, and with a faint cap of mottlings of a darker shade at the larger end. "They measure ·73″ by ·52″."

The nest found by Mr. Osmaston was neatly but flimsily made of moss and lined with roots, having a few feathers inside. It was woven into and suspended from the small branch of a *Viburnum rubescens* bush and was about three feet from the ground. Other nests have been described to me as beautiful watch-pockets of moss lined with feathers and fixed in the pendent moss of steep bank-ledges; one was said to have been placed on the ground, hidden in deep moss.

91. STAPHIDIA RUFIGENIS.

Blanford, F. B. Ind. i. p. 206.

Hume's *Staphidia* appears to be the Western representative of this genus, and I doubt whether the locality, Daphla Hills, for *S. castaneiceps* is correct, the bird Godwin-Austen obtained there having been, more probably, of this species.

So far as we know at present, it is found at the foot of all the hills bordering the Lakhimpur district, both north and south, but we have not been able to ascertain to what height it ascends. It is of extreme rarity everywhere.

So far I have in five years seen but two nests *in situ*, of these one contained young birds and the other three eggs. The first was found in a tramway-cutting leading from the A. R. T. Railway to the Ledo Tea Estate, and the second in an abandoned roadway-cutting in North Lakhimpur.

The nest is very much like that of *Staphidia castaneiceps* and is made of the same silky, jute-like material as is used by that bird; and this, as I said when describing the nest, is probably the fibre from the inner bark of some tree. What it actually is I cannot say, though I have been at some pains to discover. The fabric is beautifully put together, the thick walls being very thoroughly woven and the circular shape of the inner cup always most carefully adhered to, however rough and distorted the outside may be made in order to fit the hole in which it is placed. Of the two that I have seen, one was placed in a rather large hole, and a considerable amount of other material, such as dead leaves, grass, twigs, &c., had been used to fill up the corners; in the second case, where the hole was only about four inches across by five deep, nothing but the fibrous stuff was used. In each case the inner cup was a hemisphere about 2″ by 1″ deep.

In one nest there was absolutely no attempt at concealment, the edge being level with the mouth of the hole, which was clear of jungle; in the other there was a growth of ferns hanging over the mouth of the hole which hid it fairly well from view. The nests obtained by Dr. Coltart agree well with mine.

The eggs of Hume's Staphidia and the Chestnut-headed

Staphidia are very much alike. I have two clutches in my collection, one of which I owe to Dr. Coltart; in this the ground-colour is hard China-white, with numerous specks, spots, and small blotches of dark vandyke-brown scattered all over the eggs, if anything rather less towards the smaller end. The secondary marks consist of blotches, some of them rather large, and specks and spots of dark lavender-grey, which are much darker than is usual with secondary spots, and also better defined. These eggs are very broad ovals, very little smaller at one end than the other. They measure ·6″ by ·52″, ·6″ by ·52″, and ·58″ by ·57″.

The other clutch of eggs differs considerably from these; the ground-colour is the same, but the markings consist of much smaller specks and spots of vandyke-brown, which are principally confined to a ring at the larger extremity and only sparsely scattered elsewhere. The secondary spots are far fewer and smaller and almost entirely confined to the ring. In shape these eggs are different also, being much narrower ovals, more drawn out towards the smaller end, which is, however, very blunt. They measure ·58″ by ·50″, ·58″ by ·50″, and ·57″ by ·50″. The texture in both is very fine and close, and the eggs are very strong for their size. My first clutch was taken in May 1902, and my second in May 1904. Dr. Coltart has eggs taken in April and June.

92. Staphidia striata.

F. B. Ind. i. p. 206; Bingham, Ibis, 1903, pp. 590–1.

The breeding of this bird has already been noted in 'The Ibis' (*loc. cit.*), but I reproduce it to make this article more complete:—

"Nest of moss lined with fibres on road-cutting near Byinkyi, 5500 feet. The eggs are broad ovals, white with a faint wash of blue, spotted thickly at the broad end, where the markings are more or less confluent, with brown and purple."

93. Pteruthius xanthochloris.

Blanford, F. B. Ind. i. p. 227; Osmaston, B. N. H. S. J. xi. p. 65.

Mr. B. B. Osmaston was the first collector to obtain the eggs of this species. He writes:—"On April 14th I found a nest of this bird containing two fresh eggs. It was at an elevation of about 8000 feet, in mixed spruce and deodar forest, and was suspended, like that of an Oriole or White-eye, from the slender, horizontal, forked twig of a deodar sapling, about 7 feet from the ground. It was in shape a deep cup, very thin and delicate, but neatly put together.

"The groundwork of the nest consisted of root-fibres and a grey hair-like tree-lichen (*Usnea* sp.), decorated on the outside with ordinary grey leaf-lichens, the whole structure being bound together with silky spider cocoons and threads. The deep cavity was lined with fine, black, hair-like fibres (the rhizomorph of a fungus), and the nest attached to the twigs by the red egg-cocoons of a spider. The two eggs were long ovals, white, spotted rather sparingly and chiefly at the larger end with dark bay spots and specks. They measured ·75″ by ·54″ and ·74″ by ·52″ respectively.

"Two appears to be the full complement of eggs for this species, as I waited two days after finding the nest, but no more eggs were laid."

The nest described agrees exactly with one sent me from Sikhim, but the eggs are doubtful, and I do not describe them.

It is probable that the full complement will be found to be four or even five, as in the bird's nearest relative, *Pteruthius melanotis*.

94. ÆGITHINA NIGRILUTEA.

Blanford, F. B. Ind. i. p. 232; Serter, B. N. H. S. J. x. p. 695.

Captain Serter, in an article on Marshall's Iora, thus records its breeding in Cutch, where he states that it is plentiful:—

"The eggs average 0·68″ by 0·54″, and are white in colour with long streaks of lavender-grey and brown, forming a broad zone round many eggs. The nest is usually placed in a mimosa of sorts. . . . . The nest is a shallow cup, rather broad for its depth, very neatly made of fibre, with a few hairs inside and cobwebs outside. It somewhat resembles a Minivet's nest, but is broader and less ornate, though equally hard to find. Occasionally, though rarely, the nest is built in the forked twig of a 'pipul' (*Ficus religiosa*), but I have only obtained one thus placed, which I feel sure was that of a pair which I had previously robbed in a *Mimosa* tree close by."

A pair of eggs in my collection, taken by Mr. Kemp, are exactly like those of the Common Iora. They are the only specimens that I have seen, but others have been taken by two or three collectors, all of whom describe the nest and eggs as being similar to those of *Ægithina typhia*.

95. Cephalopyrus flammiceps.

Blanford, F. B. Ind. i. p. 247.

The eggs of this little bird have now often been taken and are well known. In colour they are pure unspotted blue and very like those of *Zosterops* (White-eye), but decidedly darker, while they are narrower ovals. The nest is placed in a tiny hole of some tree, and Dr. Coltart has found it in a dead bamboo.

[To be continued.]

VI.—*On a small Collection of Birds from the Vicinity of Lake Menzalah, in the Delta of Egypt.* By W. L. S. Loat, F.Z.S.

During the spring of 1903 I spent a couple of months in collecting birds at the north-west corner of Lake Menzalah, staying at a small fishing-village called Sheik Shuttah, about five miles from Damietta.

Lake Menzalah, the largest of the four great lakes of Lower Egypt, is situated in the extreme north-east corner of the Delta and close to Port Said. The water is for the most part brackish, except at those points where fresh water enters the lake, chiefly during the rise of the Nile. The land in the vicinity of the village varies a good deal in character. The shore of the Lake is flat and more or less bare; then comes a stretch of wet ground with a little low-growing vegetation and a few scattered pools. The village itself is placed on a low sandy mound. About half a mile away, and some two hundred yards from the edge of the Lake, is a patch of cultivated ground about five acres in extent, divided by trenches and surrounded by a raised path with a border of bushes and a few stunted trees, which form a favourite haunt for Warblers and small birds. In the following pages this piece of ground will be simply referred to as the "patch of cultivated land." Half a mile from the lake are several pools surrounded by tall reeds. To the north-west is a wide stretch of more or less sandy ground covered with rough grass, with every here and there bare patches and large shallow pools. About a mile from the village and in the direction of Damietta is the cultivated land.

In the arrangement of the species I have followed Capt. Shelley's 'Handbook of the Birds of Egypt,' but I have generally used the names of the B. O. U. List for the British species. Those marked with an asterisk (*) were identified, but not obtained.

1. *TURDUS MUSICUS. *Song-Thrush.*

On March 11th, while walking through some fields of broad beans, a large number of these birds were put up.

2. *TURDUS MERULA. *Blackbird.*

On March 11th a single specimen of this species was seen.

3. MONTICOLA SAXATILIS. *Rock-Thrush.*

A female was obtained on April 19th.

4. SAXICOLA ŒNANTHE. *Wheatear.*

Common, especially in the vicinity of the village.

5. SAXICOLA SALTATRIX. *Ménétries's Wheatear.*

Fairly numerous, and, like the former species, generally to be found on the outskirts of the village.

6. SAXICOLA STAPAZINA.

"*Saxicola stapazina* Linn."; Salvadori, Ibis, 1904, p. 77.

7. Saxicola melanoleuca.

For the identification of this species, and also that of the Lark, I am indebted to Dr. P. L. Sclater.

8. Pratincola rubetra. *Whin-Chat.*

♂. April 21st. ♀. April 24th.

These, the only examples seen during my stay in this part of Egypt, were found near the patch of cultivated land.

9. Pratincola rubicola. *Stone-Chat.*

♂. March 17th.

Very few individuals of this species were observed.

10. Ruticilla phœnicura. *Redstart.*

♂. April 7th. 3 ♂. April 19th. 2 ♂. April 20th.

The first specimen seen and obtained was on April 7th, but towards the end of that month the birds became more numerous. So far as my observations went they were all males.

11. Cyanecula suecica. *Blue-throated Warbler.*

Under this heading I have included both the "red-spotted" and "white-spotted" forms. While collecting in this district I obtained an interesting series of specimens, including both of the above-mentioned forms and many that were intermediate. I found the "red-spotted" form much the more abundant, while only a single example of the pure "white-spotted" was obtained. All the nineteen specimens were shot within a small area, viz., on the paths surrounding the patch of cultivated land. At the beginning of March fair numbers were seen, but later they increased, though they dropped again considerably towards the end of the month. By the middle of April they had, practically speaking, disappeared. Below is a list of the specimens obtained, to which are added a few notes on the variations observed.

1. ♂. March 9th.—Dark reddish orange spot, a few white feathers at the extreme upper part of the spot, below these again a few white feathers tinged with colour, which increases in intensity towards the middle of the spot.

2. March 12th.—Dark reddish orange spot, some of the feathers at its lower edge having their tips glossy white.
3. ♂. ,, 17th.—Reddish orange spot.
4. ♂. ,, 17th.—Whitish spot, most of the feathers tinged with pale reddish orange, and some in the middle slightly marked with black.
5. ,, 17th.—Pale reddish orange spot.
6. ♀. ,, 17th.—Centre of the throat dull white, no colour.
7. ♀. ,, 17th.—Whitish spot tinged with reddish orange.
8. ♂. ,, 18th.—Reddish orange spot.
9. ♂. ,, 19th.—Pure white spot, feathers of a glossy texture.
10. ♂. ,, 19th.—Reddish orange spot.
11. ♂. ,, 19th.—Reddish orange spot.
12. ♀. ,, 21st.—White spot distinctly tinged with reddish orange.
13. ♀. ,, 21st.—Reddish orange spot.
14. ♂. ,, 22nd.—Well-defined reddish orange spot.
15. ♂. ,, 22nd.—Glossy white spot, a few of the feathers distinctly tinged with reddish orange.
16. ,, 28th.—Centre of the throat dull white.
17. ♀. ,, 30th.—Large spots of reddish orange colour.
18. ♂. ,, 30th.—Dark reddish orange spot.
19. ♀. April 15th.—Large pale reddish orange spot.

12. PHILOMELA LUSCINIA. *Nightingale.*

♂. April 19th. ♀. April 24th.

13. ACROCEPHALUS ARUNDINACEUS. *Reed-Warbler.*

♀. April 14th. ♀. April 15th.

Found in a clump of reeds surrounding a pool.

14. ACROCEPHALUS PALUSTRIS. *Marsh-Warbler.*

♀. April 14th.

Shot at the same spot as the last species.

15. *ACROCEPHALUS STENTOREUS. *Clamorous Sedge-Warbler.*

The characteristic note of this bird was often heard from the thick clumps of reeds surrounding the pools.

16. CISTICOLA SCHŒNICOLA. *Fan-tail Warbler.*

17. DRYMŒCA GRACILIS. *Graceful Warbler.*

I found this species very numerous amongst the low-growing vegetation on one of the islands in the Lake.

18. Phylloscopus sibilatrix. *Wood-Warbler.*
2 ♂s. April 20th.

Not uncommon amongst the low bushes surrounding the patch of cultivated land.

19. Phylloscopus bonellii. *Bonelli's Warbler.*
♀. March 26th. ♀. March 30th.

Found at the same place as the last species.

20. Phylloscopus rufus. *Chiffchaff.*

This was the most numerous of the Warblers, and was found frequenting the same spot as the last two species. It took its departure about the middle of April.

21. Sylvia rueppelli. *Rüppell's Warbler.*

This species was first seen and obtained on March 19th, from that time onwards till the end of the month it was not uncommon, but disappeared from the locality towards the end of April.

22. Sylvia curruca. *Lesser Whitethroat.*

During the latter half of March this bird was not uncommon amongst the low bushes surrounding the patch of cultivated land.

23. Muscicapa atricapilla. *Pied Flycatcher.*
♂ & ♀. April 24th.

Only seen on one occasion.

24. *Hirundo riocourii. *Oriental Chimney-Swallow.*

Fairly common.

25. Motacilla alba. *White Wagtail.*

On referring to my notes I find that on March 10th this species was fairly common, on March 20th large numbers had arrived; while three days later they had considerably diminished, and on the 14th of April they had almost disappeared.

26. Motacilla flava. *Grey-headed Yellow Wagtail.*

Much less numerous than the preceding species. Was first obtained on March 9th; also a male and female on the 19th of the following month.

27. Anthus trivialis. *Tree-Pipit.*

A few specimens were obtained during the latter half of April.

28. Anthus pratensis. *Meadow-Pipit.*

A few of these Pipits were generally to be found on a stretch of damp ground which was sparsely covered with grass and weeds. On the 20th of March there was a noticeable increase in point of numbers, but three days later most of them had disappeared.

29. Anthus cervinus. *Red-throated Pipit.*

The most numerous of the Pipits met with. The specimens obtained about the middle of April had, practically speaking, finished their moult.

30. Anthus spipoletta. *Water-Pipit.*

This was a rather uncommon species, and I only met with it at one spot, viz., on a stretch of damp ground more or less overgrown with grass and weeds. Both the specimens, which were obtained on the 10th of March, were in full moult.

31. Anthus campestris. *Tawny Pipit.*

♂. March 10th. ♂. April 7th.

I met with but few examples of this Pipit, which kept to the more sandy parts of the land, over which were scattered tufts of rough grass.

32. Anthus richardi. *Richard's Pipit.*

♂. April 21st.

In Shelley's 'Birds of Egypt' no mention is made of this species. I first met with it on some sandy ground sparsely covered with grass, but saw it again on two or three subsequent occasions, the last time on the 23rd of April. Its long undulating flight is not unlike that of a Wagtail.

33. Alauda cristata. *Crested Lark.*

A common species, and always to be met with on the road leading from the village to Damietta. All those seen belonged to the dark variety.

34. Alauda arvensis. *Sky-Lark.*

Two females of this Lark were obtained on the same ground as that frequented by the Tawny Pipits.

35. Calandrella minor. *Short-toed Lark.*

This species was fairly common during March, frequenting the open sandy ground near the village and generally to be found in small parties.

36. Linota cannabina. *Linnet.*

♂. March 11th.

A number of these birds were seen on the cultivated land about a mile from the village.

37. Oriolus galbula. *Golden Oriole.*

♀. April 22nd.

A single individual was brought to me by a native on this date.

38. Sturnus vulgaris. *Starling.*

2 ♀. March 19th.

A few small flocks were seen on the cultivated land.

39. Iynx torquilla. *Wryneck.*

♂. March 11th.

This specimen was shot in a tree near the cultivated land.

40. Cuculus canorus. *Cuckoo.*

The Cuckoo was first obtained on April 21st, and on the same day a native brought to me eight adults and an immature bird, all of which had been shot in the same locality: from which I should infer that this species was then just beginning to arrive from the south.

41. Alcedo ispida. *Common Kingfisher.*

Several of these birds frequented the trenches surrounding the patch of cultivated land.

42. *Ceryle rudis. *Black-and-White Kingfisher.*

One or two were generally to be seen hunting for small fishes in the shallow water at the edge of the Lake.

43. CORACIAS GARRULUS. *Roller.*

♂. April 23rd.

A single specimen was obtained near Damietta on the above date.

44. CAPRIMULGUS ÆGYPTIUS. *Egyptian Goatsucker.*

♀ April 4th and ♂ 20th.

These birds were put up from a piece of sandy ground covered with tufts of rough grass.

45. *CIRCUS ÆRUGINOSUS. *Marsh-Harrier.*

A rather uncommon species in the district.

46. CIRCUS PALLIDUS. *Pale-chested Harrier.*

Not common.

47. FALCO PEREGRINUS. *Peregrine Falcon.*

A female was obtained on the 12th of April, this being the only occasion on which this species was met with.

48. FALCO VESPERTINUS. *Red-legged Falcon.*

A male and female were obtained on the 22nd of April.

49. *MILVUS ÆGYPTIUS. *Parasitic Kite.*

Uncommon in this locality.

50. *COTURNIX COMMUNIS. *Quail.*

A single specimen was seen on the 16th of March.

51. SQUATAROLA HELVETICA. *Grey Plover.*

♂. April 16th.

This species was seen on three or four occasions feeding along the edge of the Lake. On the 23rd of April there were still a few about.

52. ÆGIALITIS CANTIANA. *Kentish Plover.*

This Plover was fairly abundant, and frequented the sandy ground and shallow pools near the Lake, but I do not remember ever having seen it along the edge of the latter, like the other small Waders.

53. ÆGIALITIS HIATICOLA. *Ring-Plover.*

A fairly common species along the edge of the Lake and in the vicinity of the pools near by.

54. Ægialitis curonica. *Little Ring-Plover.*

Common, and often found in the company of the last two species.

55. Numenius arquata. *Curlew.*

♂. March 13th.

Only seen on three or four occasions.

56. Limosa ægocephala. *Black-tailed Godwit.*

Not an uncommon bird, generally frequenting the larger pools.

57. Machetes pugnax. *Ruff.*

A fairly numerous species, generally found in the vicinity of pools and on flooded land. Several individuals were seen with nearly pure white heads and necks.

58. *Gallinago cœlestis. *Common Snipe.*

This bird was occasionally met with during the earlier part of March.

59. *Gallinago gallinula. *Jack Snipe.*

A single specimen was seen on the 30th of March.

60. Rhynchæa capensis. *Painted Snipe.*

Examples of this species were occasionally brought to me by natives from Damietta.

61. Tringa minuta. *Little Stint.*

Very numerous during March, but by the 17th of April there were very few to be seen.

62. Tringa temmincki. *Temminck's Stint.*

I obtained a specimen on the 10th of March.

63. Tringa alpina. *Dunlin.*

This species was fairly numerous. One or two large flocks were seen, but by the 17th of April it was comparatively scarce.

64. Totanus calidris. *Redshank.*

Common and generally found by shallow pools, often in company with Stints and Ring-Plovers.

65. *Totanus canescens. *Greenshank.*

This bird was seen on one or two occasions.

66. Totanus glareola. *Wood-Sandpiper.*

One or two individuals were generally to be found on a piece of wet ground which was under partial cultivation.

67. Himantopus candidus. *Black-winged Stilt.*

A couple were brought to me by a native, who had obtained them near Damietta.

68. *Recurvirostra avocetta. *Avocet.*

A single bird was seen on the 1st of April.

69. *Plegadis falcinellus. *Glossy Ibis.*

I saw a couple of these birds standing in a pool about half a mile from the village.

70. Platalea leucorodia. *Spoonbill.*

Not uncommon on Lake Menzalah.

71. *Ardea cinerea. *Common Heron.*

72. *Ardea garzetta. *Little Egret.*

Met with on two or three occasions standing in shallow water near the edge of the Lake.

73. Ardea ralloides. *Squacco Heron.*

Only occasionally seen in the locality.

74. Nycticorax griseus. *Night-Heron.*

I bought a specimen of this bird from a native, who had obtained it near Damietta; but I never came across it in the district round the village, owing no doubt to the entire absence of large trees in which it could roost during the day-time.

75. Phœnicopterus antiquorum. *Flamingo.*

Flamingos were very numerous when I first arrived in this locality at the beginning of March, but towards the end of April their numbers were considerably less; possibly they had moved to another part of the Lake.

76. Gallinula chloropus. *Moor-hen.*

I only obtained a single specimen of this species.

77. Fulica atra. *Coot.*

Large numbers frequent the Lake.

During the winter vast flocks of Ducks of various species frequent Lake Menzalah, thousands being caught annually by means of nets. During April their numbers are considerably diminished. As I only went out on the Lake on one occasion, no attempt is made in this paper to give a complete list of the species which frequent this large extent of water; therefore mention is only made of those which I either met with near the edge of the Lake, or which were exposed for sale in the local market.

78. *Anas boschas. *Wild Duck.*

One flock was seen on a large pool not far from the Lake.

79. *Dafila acuta. *Pintail Duck.*

Fairly common during the earlier part of March. As the birds were generally seen in pairs, I inferred that the mating-season had commenced.

80. *Rhynchaspis clypeata. *Shoveler.*

Common near the edge of the Lake.

81. *Querquedula crecca. *Teal.*

Not uncommon.

82. Mareca penelope. *Wigeon.*

83. Fuligula ferina. *Pochard.*

84. Fuligula rufina. *Red-crested Pochard.*

On the 29th of March two live males of this species were brought to me by a native. They had been netted on the Lake about a month previously and had been kept in confinement. This Duck is considered rare and is much admired by the rich natives, who keep it in a domesticated condition. Its local name is "Won'nas." Capt. Shelley makes no mention of having met with this species.

85. Fuligula cristata. *Tufted Duck.*

Common.

86. Phalacrocorax africanus. *Long-tailed Cormorant.*
Ogilvie-Grant, Cat. B. xxvi. p. 407.

Shelley does not mention this species in the 'Birds of Egypt,' but there is a specimen in the British Museum obtained by him in the Fayoum. I saw a number for sale at the fish-market just outside Damietta on the 5th of March.

87. Sterna caspia. *Caspian Tern.*

On the 18th of April a couple were seen, one of which was obtained.

88. Sterna minuta. *Lesser Tern.*

During my stay I heard a great many references made to a small Tern, which, from the description, I concluded must belong to this species. It is much sought after by the native gunners, as they receive a good price for its skin from the plume-dealers of Damietta. Its local name is "Abu Da'a," and it regularly arrives in this part of Egypt towards the end of April. Mr. Gurney ('Rambles of a Naturalist,' p. 233) considers that this species should be looked upon as a summer, rather than a winter, visitor.

89. Larus fuscus. *Lesser Black-backed Gull.*

A few were occasionally seen near the edge of the Lake.

90. Podicipes nigricollis. *Eared Grebe.*

During March I obtained several of these birds which had been netted on the Lake.

VII.—*Notes on the Parrots.* (Part III.)

By T. Salvadori, H.M.B.O.U.*

Fam. IV. Cacatuidæ (Cat. Birds Brit. Mus. xx. p. 101).

This Family is generally recognised as quite distinct among the Psittaci. The species are not numerous, and none of the forms described since the publication of the 'Catalogue' stand on a very solid foundation.

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* Continued from 'The Ibis,' 1905, p. 542.

MICROGLOSSUS Geoffr. St.-Hil.

MICROGLOSSUS ATERRIMUS (Gm.); Büttik. Not. Leyd. Mus. xvi. pp. 166–167 (19th Nov., 1894)*; Le Souëf, Ibis, 1898, p. 56 (nesting-habits); Dub. Syn. Av. i. p. 1, n. 2 (1899); Sharpe, Hand-list, ii. p. 9 (1900).

Microglossus salvadorii Meyer, Bull. B. O. C. iv. p. vi (Arfak Mts.) (21st Nov., 1894); id. Ibis, 1895, p. 145; Dub. Syn. Av. i. p. 1, n. 3 (1899); Sharpe, Hand-list, ii. p. 9, n. 2 (1900) (=*aterrimus*).

Microglossus aterrimus aterrimus Rothsch. & Hartert, Nov. Zool. viii. p. 77 (1901).

Dr. Meyer (*l. c.*) has described as belonging to a distinct species a bird which differs from the adult of *M. aterrimus* in being more or less varied or banded with yellow; in the 'Catalogue of the Parrots' I have described a similar bird as the young of *M. aterrimus*; Dr. Büttikofer (*l. c.*) has done the same, and I believe that this view is correct. It must be remembered that the genus *Microglossus* is nearly allied to the Australian genus *Calyptorhynchus*, the members of which have the young and even the females variegated with yellow.

MICROGLOSSUS ALECTO (Less.).

Microglossus aterrimus var. *alecto* Dub. Syn. Av. i. p. 1 (1899).

Microglossus aterrimus alecto Rothsch. & Hartert, Nov. Zool. viii. p. 77 (1901).

The *Microglossi* from the Aru Islands and the Western Papuan Islands, as already stated by me in the 'Catalogue of the Parrots,' although smaller than those from the mainland, can, in my opinion, scarcely be recognised as a distinct form.

CALYPTORHYNCHUS V. & H.

CALYPTORHYNCHUS BAUDINI Vig.; Le Souëf, Victor. Natural. xvi. p. 102 (1899) (eggs); Dub. Syn. Av. i. p. 1 (1899); Sharpe, Hand-list, ii. p. 10, n. 1 (1900); Milligan, Emu, iii. pp. 12, 19, pl. ii. (nest) (1903).

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* "On the Immature Dress of *Microglossus aterrimus*."

CALYPTORHYNCHUS FUNEREUS (Shaw); Dub. Syn. Av. i. p. 2, n. 5 (1899); Sharpe, Hand-list, ii. p. 10, n. 2 (1900); North, Rec. Austr. Mus. v. p. 265 (xanthochrosis) (1904).

CALYPTORHYNCHUS XANTHONOTUS Gould; Morton,' P. R. Soc. Tasm. 1896, p. 100 (nidification); Sharpe, Hand-list, ii. p. 10, n. 3 (1900).

Calyptorhynchus funereus var. *xanthonota* Dub. Syn. Av. i. p. 2 (1899).

CALYPTORHYNCHUS BANKSI (Lath.); North, Victor. Natural. xii. pp. 136–137 (1895) (nesting-habits); Dub. Syn. Av. i. p. 2 (1899); Sharpe, Hand-list, ii. p. 10 (1900).

CALYPTORHYNCHUS MACRORHYNCHUS Gould; Sharpe, Hand-list, ii. p. 10 (1900); Le Souëf, Victor. Natural. xix. pp. 91, 92 (1902) (eggs described).

Calyptorhynchus banksi var. *macrorhyncha* Dub. Syn. Av. i. p. 2 (1899).

Calyptorhynchus banksi macrorhynchus Hartert, Nov. Zool. xii. p. 212 (Alligator River) (1905).

CALYPTORHYNCHUS STELLATUS Wagl.; Collet, P. Z. S. 1898, pp. 355, 356; Sharpe, Hand-list, ii. p. 10 (1900).

Calyptorhynchus banksi var. *stellata* Dub. Syn. Av. i. p. 2 (1899).

The question whether the three black Cockatoos (*C. banksi*, *C. macrorhynchus*, and *C. stellatus*) are specifically different or not is still unsettled.

CALLOCEPHALON Less.

CALLOCEPHALON GALEATUM (Lath.); Dub. Syn. Av. i. p. 2, n. 8 (1899); Le Souëf, Victor. Natural. xvi. p. 102 (1899) (eggs described).

Callocephalum galeatum Sharpe, Hand-list, ii. p. 10 (1900).

CACATUA Vieill.

CACATUA GALERITA (Lath.); Dub. Syn. Av. i. p. 2, n. 9 (1899); Sharpe, Hand-list, ii. p. 10, n. 1 (1900); Rothsch. &

Hartert, Nov. Zool. viii. p. 78 (1901); North, Rec. Austr. Mus. v. p. 267 (1904) (traces of melanism).

Cacatua galeritus Hartert, Nov. Zool. xii. p. 211 (N.W. Austr.) (1905).

"*C. galerita* of Australia differs at first sight from *C. triton* in its more pointed, strongly laterally incurved, and more recurved feathers of the crest." (Rothsch. & Hartert, *l. c.*)

CACATUA TRITON (Temm.); Dub. Syn. Av. i. p. 2, n. 10 (1899); Sharpe, Hand-list, ii. p. 10 (1900).

Cacatua triton trobriandi (Finsch); Hartert, Nov. Zool. iii. p. 245 (1896) (Fergusson I.); v. p. 531 (1898) (Sudest I.); vi. p. 82 (1899) (Rossel I.), p. 213 (1899) (St. Aignan), p. 216; Rothsch. & Hartert, Nov. Zool. viii. p. 79 (1901) (Fergusson, Trobriand, Woodlark, Sudest, Rossel, and St. Aignan Islands).

Cacatua triton var. *trobriandi* Dub. Syn. Av. i. p. 2 (1899).

Cacatua triton macrolopha (Rosenb.); Hartert, Nov. Zool. iii. p. 246 (1896) (Western Papuan I.); Rothsch. & Hartert, op. cit. viii. p. 78 (1901) (Mysol, Salwatty, Waigiu, and Aru Islands).

Cacatua triton triton, Hartert, Nov. Zool. viii. p. 5 (1901) (Goram-laut and Ceram-laut!); Rothsch. & Hartert, t. c. p. 78 (1901).

Dr. Hartert has strongly advocated the separation of *C. triton* into three subspecies: a larger one from the mainland of New Guinea, an intermediate one (*C. trobriandi*) from the Eastern Papuan Islands, and a smaller one (*C. macrolopha*) from the Western Papuan Islands and the Aru Islands. In the 'Catalogue of Birds' I have already mentioned these races, but I am still of opinion that they cannot be accepted as specifically or even subspecifically distinct. On the mainland of New Guinea there are large and small birds, of the latter description are those from Sorong and Ramoi on the western coast of New Guinea and also those from the Katau River on the southern coast, while some from Mysore in Geelvink Bay are exceptionally large (I have measured the wing of one reaching 355 millimetres) and others from the same island are of the ordinary size.

I have noticed that in one place (Nov. Zool. iii. p. 531) Dr. Hartert says that the form from the Western Papuan Islands (*C. macrolopha*) is intermediate between *C. triton* and *C. trobriandi*, while later (Nov. Zool. viii. p. 79) Rothschild and Hartert assert that *C. macrolopha* is somewhat smaller than *C. trobriandi*; in fact, Dr. Hartert has recognised that in male birds from St. Aignan (*C. trobriandi*) the "beaks are fully as big as they are in some males from New Guinea."

I should say that *C. triton* is a very variable species as regards dimensions.

CACATUA PARVULA (Bp.); Hartert, Nov. Zool. v. p. 120 (1898); Dub. Syn. Av. i. p. 2, n. 11 (1899); Sharpe, Hand-list, ii. p. 10 (1900).

Cacatua sulphurea parvula Hartert, Nov. Zool. iv. p. 165 (1897) (Lesser Sunda Is.); Meyer & Wiglesw. B. of Celebes, i. p. 130 (pt.) (1898).

Cacatua parvula parvula Hartert, Nov. Zool. v. p. 120 (1898) (Timor, Semao).

Dr. Hartert has the following remark:—"Exactly like *C. sulphurea sulphurea* and of about the same dimensions, not smaller, with the beaks as a rule as powerful as in any from Celebes, but the ear-coverts paler and much less yellow."

I must notice that while Dr. Hartert at first considered *C. parvula* a subspecies of *C. sulphurea*, he has recognised it as a distinct species later.

CACATUA OCCIDENTALIS Hartert; Sharpe, Hand-list, ii. p. 10, n. 4 (1900).

Cacatua parvula Hartert (nec Bp.?), Nov. Zool. iii. p. 503 (1896) (Lombok); Everett, ibid. p. 596 (1896); Hartert, op. cit. v. p. 45 (1898) (Flores).

Cacatua parvula occidentalis Hartert, Nov. Zool. v. p. 120 (1898) (Lombock, Flores, Sumbawa), p. 461 (Pantar, Alor) (1898).

Cacatua parvula var. *occidentalis* Dub. Syn. Av. i. p. 2 (1899).

While typical *C. parvula* seems to be confined to Semao and Timor, *C. occidentalis*, with its larger bill, would be its representative form in Lombock, Flores, and Sumbawa. Specimens from all these localities were attributed by me (Cat. B. xx. p. 120) to one and the same species, and I am still in doubt whether they can be separated. Dr. Hartert has already recognised that specimens from Pantar and Alor have the bill less powerful than those from Lombock.

CACATUA SULPHUREA (Gm.); Hartert, Nov. Zool. iv. p. 164 (1897); Meyer & Wiglesw. B. of Celebes, i. p. 128 (1898); Dub. Syn. Av. i. p. 2 (1899); Sharpe, Hand-list, ii. p. 10, n. 5 (1900).

Cacatua sulphurea sulphurea Hartert, Nov. Zool. iv. p. 165 (1892).

Cacatua sulphureus (sic) Hartert, Nov. Zool. x. p. 22 (Tomia, Binongka, and Watjee I.) (1903).

CACATUA DJAMPEANA Hartert; Sharpe, Hand-list, ii. p. 11, n. 6 (1900).

Cacatua sulphurea Hartert (nec Gm.?), Nov. Zool. iii. p. 176 (1896) (Djampea).

Cacatua sulphurea djampeana Hartert, Nov. Zool. iv. p. 164 (1897) (Djampea); Meyer & Wiglesw. B. of Celebes, i. p. 130 (1898); Hartert, Nov. Zool. x. p. 22 (1903) (= *sulphurea*?).

Cacatua sulphurea var. *djampeana*, Dub. Syn. Av. i. p. 2 (1899).

Dr. Hartert has separated subspecifically from the Celebesian *C. sulphurea* the Djampean Cockatoo (of which he had only two females) on account of the smaller bill, 24 mm. from the end of cere to the tip in a straight line, while the bills of females from Celebes measure 27 mm: "Iris crimson-lake; orbital skin white; bill greyish black; feet dark grey; claws black" (*Doherty*).

The value of this form, even as a subspecies, has always appeared to me very questionable, and it seems that even Dr. Hartert's confidence in *C. djampeana* has been lately shaken, he having found that in specimens from Tukangbesi, south-east of Celebes, the males have large bills like those from Celebes, while the females have them no larger than those from Djampea.

Cacatua citrinocristata (Fras.); Hartert, Nov. Zool. iii. p. 587 (1896) (Sumba); Forbes & Robins. Bull. Liverp. Mus. i. n. 1, p. 9 (1897); Hartert, op. cit. v. p. 472 (1898) (Sumba); Dub. Syn. Av. i. p. 2, n. 13 (1899); Sharpe, Hand-list, ii. p. 11, n. 7 (1900).

Forbes and Robinson mention a co-type or authentic specimen of the species in the Liverpool Museum.

Cacatua leadbeateri (Vig.); Dub. Syn. Av. i. p. 2, n. 14 (1899); Sharpe, Hand-list, ii. p. 11, n. 8 (1900); Tuck, Zoologist, 1901, p. 478 (breeding in England).

Cacatua alba (P. L. S. Müll.); Dub. Syn. Av. i. p. 2, n. 15 (1899); Sharpe, Hand-list, ii. p. 11, n. 9 (1900).

Cacatua albus (sic) Hartert, Nov. Zool. x. p. 4 (Obi major), p. 45 (Batjan) (1903).

Cacatua gymnopis Sclat.; North, Pr. Linn. Soc. N. S. W. (2) ix. pp. 37, 38 (habitat) (1894)*; Dub. Syn. Av. i. p. 3, n. 18 (1899); Sharpe, Hand-list, ii. p. 11, n. 12 (1900); Hartert, Nov. Zool. xii. p. 211 (1905).

This bird is now known from Depot Creek in Central South Australia and Northern Queensland. The Tring Museum has recently received it from Flora Valley and the Alligator River in N.W. Australia, and from Eureka, N. Territory.

Cacatua goffini Finsch; Sharpe, Hand-list, ii. p. 11, n. 14 (1900); Hartert, Nov. Zool. viii. p. 5 (Toel, Little Key), p. 165 (Larat, Timor-laut) (1901), xi. p. 195 (Kisser) (1904).

Cacatua sanguinea var. *goffini* Dub. Syn. Av. i. p. 3 (1899).

We know for certain that this bird is a native of the Tenimber Islands, and I firmly believe that the birds which have been found in Little Key and Kisser must have been brought there alive by man.

Cacatua ducorpsi J. & P.; Dub. Syn. Av. i. p. 3, n. 20 (1899); Sharpe, Hand-list, ii. p. 11, n. 15 (1900); Rothsch.

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* See also on the *patria* of *Cacatua gymnopis*, 'Ibis,' 1894, p. 454.

& Hartert, Nov. Zool. viii. p. 187 (Kulambangra, Fauro, Guadalcanar) (1901), p. 377 (Guadalcanar) (1901), ix. p. 588 (Isabel I.) (1902), xii. p. 254 (Rendova, New Georgia, Bougainville) (1905).

The females have the bills distinctly smaller than the males (*Rothsch. & Hartert*).

CACATUA ROSEICAPILLA Vieill.; Hartert, Nov. Zool. xii. p. 212 (Alligator River) (1905).

LICMETIS Wagl.

I have met with no recent remarks on the two species of this genus.

CALOPSITTACUS Less.

CALOPSITTACUS NOVÆ-HOLLANDIÆ (Gm.); Sharpe, Hand-list, ii. p. 11 (1900).

Calopsitta novæ-hollandiæ Dub. Syn. Av. i. p. 3 (1899); Hartert, Nov. Zool. xii. p. 212 (Derby) (1905).

[To be continued.]

VIII.—*The Breeding-grounds of the Rosy Gull.*

By S. A. BUTURLIN.

THE Rosy Gull (*Rhodostethia rosea*) breeds quite commonly in the Kolymá Delta (where I am now staying) and is actually the most numerous member of the Order Gaviæ there during the summer, except the Black-capped Tern. Up to the time of writing (June 23rd) I have collected 38 skins and 36 eggs of this pretty bird, though I have spared large numbers of adults and their nests expressly to enable me to acquire a sufficient quantity of the young in down and of specimens in the immature plumage.

The delta of the Kolymá, which is the easternmost of the great rivers of the North Polar basin, lies, roughly speaking, between 68½° and 69¾° N. lat. and from 159° to 161½° E. long. This vast area, at least 15,000 square kilometres in extent, consists of a liberal admixture of lakes, lagoons, channels, rivulets ("viska"), swamps, moors, and damp ground of every description, with dry places only at intervals. The southern part of this delta, some one-third—or even less—of the whole, is covered by forests; the other parts stretch beyond the northern limit of the forests, but are for the most part covered by extremely dense and well-grown bushes of *Alnus incana* (ordinarily 5 to 10 feet high, but occasionally reaching a height of 15 feet with a thickness of from 5 to 6 inches) and by various species of *Salix*. The traveller must go some twenty kilometres from the main channels of the great river, and then perhaps two or three kilometres from the rivulet or "viska" along which he is advancing, to find a little piece of true "túndra," such as I have seen on Kolguev Island, with lichens covering the ground, tiny bushes of *Betula nana* and different *Salices* studded over the drier spots, and mosses and *Carices* clothing the damp portions.

As to climatic conditions, I crossed and re-crossed the delta by means of dogs during the first half of May, when it was the depth of winter from an European point of view; heavy snowstorms then occurred daily and lasted all day long, while the thermometer stood at 20° Celsius below the freezing-point in the daytime and 30° in the night. Towards the middle of May the weather became somewhat better, and the snow melted at midday (freezing again, of course, in the shade), so that on the southern slopes and sandy islands the soil made its appearance. At this time the first specimens of Geese (*Anser serrirostris*, *A. gambeli*, and in smaller numbers *A. rhodorhynchus*) and even Swans (*Cygnus bewicki*) made their appearance, migrating down the river; while about May the 20th small parties of them passed. *Linota exilipes*, *Plectrophenax nivalis*, *Corvus orientalis*, the White-tailed Eagle, and *Lagopus albus* (partly wintering in the district) had of course long been present. Then migration stopped, and snowstorms began again until May the 27th. That day was fine with only some 3°–6° Cels. of frost, so that the snow melted in the hot sun, and on this and the following days Geese, Swans, Ducks, Gulls (*Larus vegæ* and (?) *L. glaucescens*), and Waders (especially *Tringa maculata, T. subarquata, T. sakhalina, Phalaropus fulicarius,* and *Charadrius fulvus*) migrated in great numbers. At last, on May the 30th, it rained, while the thermometer varied between 16° Cels. above zero and as much below; snow became scanty on the open places, and the first Rosy Gull was reported*. On the morning of May the 31st one of my men saw a pair, and during the day I went on the river—where the fathom-thick ice was still quite safe—and came across several dozens. The sun was shining brightly, and in the distance each pair appeared like so many roseate points on the bluish ice of the great stream. I say "pair," as from their first arrival the birds were constantly seen in pairs. They had evidently just finished their migration and were tired after their exertions; for they sat very quietly on the ice, and though all attempts to stalk them were unavailing, they would not fly far, but only shifted from place to place with a lazy and somewhat uneasy motion of their wings, which made me jot down in my notebook on the spur of the moment that the flight was more Fulmar-like than Gull-like.

Several hours later they had evidently recovered from their fatigues, and then I saw that their flight, far from being Fulmar-like, was really much more Tern-like. They became quite easy of approach, even more so than the Terns, and I was able to observe them and procure specimens when I wished. On this and several following days they were always to be found on a little shallow lake, some 200 fathoms long and 50 to 70 wide, formed by the melted snow running partly off the river-ice and partly off the sand of the little island. The place was full of life when undisturbed; plenty of Geese, some Swans, flocks of *Fuligula marila* and *F. glacialis,* pairs of *Anas formosa,* clouds of both species of Phalarope, mixed parties of *Limosa baueri* and *Squatarola helvetica, Totanus fuscus, Limicola sibirica, Tringa temmincki, T. subarquata, T. sakhalina, T. maculata,* and *T. acuminata* were constantly to be seen at or near it, in company with lively Black-capped Terns and flocks—mournful and silent—of *Xema sabinii.*

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* It is called here the "Rosy Gull" or "Little Collared Gull" indifferently—in Russian, as the delta of the Kolymá is the only place in N.E. Siberia that I visited where the Russian and not the Yakut language is in common use.

Rosy Gulls hovered over this lake catching flies and other insects, or swam upon the surface, though they more often sat on the snow and ice in the vicinity. Both birds of a pair usually sat close together ; and if the male, easily distinguishable even at a distance by his much more intense coloration, thought that others came too close, he actually tried to push his mate to one side; or if a male attempted to approach a second time (some of the younger, paler-coloured birds not having as yet paired) he would engage in a short fight with the intruder—in which he was sometimes aided by the female—with angry cries of "miaw-miaw-miaw," to which the retreating culprit responded with a "á-dac, á-dac, á-dac," repeated with different intonations. Every now and then the male tried to express his feelings to his mate by pecking her curiously, as if trying to kiss her, with his open beak on her head or neck, or made a few steps round her to one side or the other, shewing off as some Pigeons do ; then with a sound like trrrrrr lowered his neck and breast to the ground, and in this position, with all the hinder part of the body, the tail, and the ends of the folded wings high up in the air, continued for some seconds his little promenade before the female, who very rarely engaged in such antics.

The note of *Rhodostethia* is peculiar, being high and more melodious than that of Gulls in general, and very variable. The cries that I most often heard resembled "á-wo, á-wo, á-wo" and "claw, claw, claw" (or "cliaw, cliaw"). When disturbed, the birds have a short cry of "viá, viá, viá," and if much disappointed a longer "kiáw, kiáw" or "kiáoo, kiáoo, viáw." When quarrelling they utter "miáw, miáw, miáw" and "á-dac, á-dac, á-dac," as already mentioned.

The Rosy Gull swims easily, and sometimes I saw it taking a regular bath. It dipped its head under, while sitting deep in the ice-cold lake, and, throwing the water over its back, moved its wings quickly below the surface, holding them somewhat apart from the body. Then it lifted itself almost clear and threw itself forcibly head downwards into the water. Once a Rosy Gull flew over the surface of the lake with a cry of "carvac-wá" and took up water with its beak on the wing, as Swallows do, but subsequently it settled on the surface for some two or three seconds without folding its wings, which were elevated over the back, and drank after the usual fashion.

From June the 3rd onwards *Rhodostethia* became scarce on the river and was dispersed over the delta, though the snow was still deep in the bushy portions and the ice had only melted for a distance of a fathom or two from the banks. I did not think that the birds had begun to lay their eggs, as the female which was killed on May the 31st had the yolks in the ovaries not more than 8 mm. in diameter; but several clutches were brought to me—all somewhat incubated—on June the 13th, the very day on which the ice on the Kolymá at last broke up. The last four clutches, taken by myself on June the 26th, were so much incubated that the embryos were covered with down, and would have been hatched in a very few days. At this time of the month the bushes of *Alnus* and the *Salices* became perceptibly green, and mosquitos appeared in considerable numbers, but the middle of the lake not immediately connected with the river was still covered with ice.

I found the Rosy Gull nesting in little colonies of from two or three to ten or fifteen pairs, in company with the common Black-capped Tern of the delta, which, however, in nearly every case exceeds it in numbers*.

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* This Tern is of the *Sterna fluviatilis* type, but has the whole bill red to the tip, and the breast and belly (not the vent) nearly as grey as the back. Tail with outer webs of two outer pairs of feathers grey; outer web of first primary blackish; dark shaft-stripes on inner webs of primaries not wider than their outer web. So far as I can judge, without books or other materials, it is not *Sterna paradisea*.

A pair or two of *Totanus fuscus* nearly always breed with them, and not unfrequently *Colymbus arcticus* and *Fuligula glacialis*, sometimes accompanied by the White-winged Gull (*Larus glaucescens*?) and a pair or two of *Squatarola helvetica*. A little low island in a lake is usually selected for the breeding-place, and this makes the nests very difficult of access, as until the last days of June a boat can only be used near the banks and must be then dragged over the ice, which is exceedingly slippery and generally unsafe after June comes in, especially near the islands, as I found to my cost. One of the colonies, however, was on a piece of wet tundra near two lakes, a square kilometre in extent, covered with a labyrinth of pools of snow-water from two to six or even ten inches deep, but practicable in wading-boots, thanks to its floor of everlasting ice beneath the underlying mud. Between these pools, which were from fifteen to fifty feet in diameter, were pieces of very wet ground covered with *Carices*, damp mossy spots, and even tiny patches of comparatively dry bog covered with lichens or *Betula nana*. In this colony I found ten nests of *Rhodostethia*, placed, among those of the Tern, on little mossy swamps almost bare of grass, evidently because the more grassy places were too wet and unsafe. But in the remaining colonies the state of affairs was otherwise; there the Tern nested on the moss—sometimes making no nest at all—and laid its one or two eggs much nearer to the dry parts of the little islands, which were perhaps a hundred yards long and from ten to twenty yards wide, while the Rosy Gulls made their nests on wet grassy spots or bogs much nearer to the water, and these nests rose from four to ten inches—generally from five to eight inches—above the surface. The hollow formed in the grass (dead grass, of course, as green grass is hardly seen even by the 20th of June) is about six or seven inches in diameter, but the nest proper is a shallow cup only about four or four and half inches in diameter. It is composed of dry grass and *Carices*, sometimes with the addition of a few dry *Betula* or *Salix* leaves, while I once saw one made of white reindeer-moss. The cup of the nest is from $\frac{1}{8}$ to $\frac{1}{4}$ in.—generally $\frac{1}{4}$ in.—thick.

The Rosy Gull lays sometimes two, but nearly always three, eggs ; four are said to be found not uncommonly, but I doubt the fact. The eggs, as might be expected from so beautiful a bird, are very handsome, and, happily for the collector, are quite unlike those of the Black-capped Tern. I measured carefully * 36 eggs of the Gull and 25 of the Tern, with the following results :—

	Rhodostethia rosea.		*Sterna sp.*	
	Length.	Breadth.	Length.	Breadth.
Minimum (of breadth) in mm...	43·0	30·0	43·4	28·4
Minimum of length and the whole egg	38·6	31·0	36·6	28·8
Maximum (of breadth)	44·5	32·9	(and of the whole) 41·9	31·0
Maximum of length and of the whole	45·8	32·1	(not of the whole) 43·4	28·4
Mean (for 36 eggs)	43·3	31·6	(for 25 eggs) 39·4	29·5

The eggs of the Rosy Gull are not only larger and in particular broader than those of its neighbour, but are of quite a different shape, being extremely round for Gulls' eggs, with the small end by no means pronounced. They are much darker and more evenly coloured than any other eggs of the Order known to me, being of a beautiful deep rich olive-green, without any of the greyish or sandy shade so common in eggs of *Sterna* and other members of the Order. They are spotted, especially near the larger end, with chocolate-brown (not earthy brown), the somewhat clouded spots being generally some 3–5 mm. in diameter, and not so sharply defined on the dark ground-colour as is usual in Gavian eggs. The spots are of unequal intensity, some darker, some paler, with every intergradation ; they cannot be divided into two sharply defined groups as in other

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* I had no means of weighing them.

Gavian eggs, perhaps because the dark markings do not stand out very clearly on the deep olive-green ground-colour.

During the daytime even the female readily leaves the nest, and flies about the pools of water or walks over the melting ice, picking up insects and often slipping in a curious way on the surface. But in the night—the sunny Arctic night—the Rosy Gulls which mob you at some distance from the colony are invariably males.

The Rosy Gull can hardly be called a peaceful bird, though the Terns, comparatively weak as they are, generally begin the trouble, for it is quite prepared to fight, if challenged. Usually the Tern distances its rival in the air, but I have seen the Gull catch it on the wing and give it a good shake. I once saw a female Rosy Gull pounce ferociously on an innocent *Calcarius lapponicus* which was passing, but she was in a very nervous state owing to my examination of her nest, which was going on.

When an intruder visits the colony, the Gulls fly overhead and scream, but are far less noisy and anxious than the Terns. If he sits down, they very soon become quiet, and the female settles down on her eggs even within thirty or forty yards, and so betrays their position. If the nest is approached, both parents hover overhead persistently, but do not venture nearer than fifteen or twenty-five yards, the male being usually silent, but the female screaming and uttering cries of various descriptions—now the regular note of "kiáoo, kiáoo, kiáoo; miáw, miáw, viáw, viáw; trrrrr"; now the true Larine "kwa, kwa, kwa," or even a Tern-like "ée, ée, ée-kwa, iéw," all with very varied intonation. When the nest has been passed some twenty or thirty paces the female settles down and looks to see if the eggs are still there—on one occasion only, after I had taken the eggs, did she pursue me angrily at close quarters until I had left the colony; this was an intensely coloured, and evidently a very old, bird.

The Rosy Gull and its eggs are too small to be hunted up by the Lamuts or Chukchas of the delta, and rapacious birds

proper are scarce there; but the eggs are often destroyed by the numerous *Stercorarii,* and I have to-day seen (June 30th) two Buffon's Skuas trying to catch the bird itself. In a few days I hope to find young Rosy Gulls in the down, but about them, and other birds collected on my journey, I will write when I return home.

Pokhodskoe, Kolymá Delta,
30 June, 1905.

IX.—*Sur le Waldrapp,* "Corvus sylvaticus" *de Gessner.*

Par Victor Fatio, F.M.B.O.U.

Je m'explique parfaitement la surprise que vous manifestez dans votre aimable article ('Ibis,' 1905, p. 120) sur la seconde partie du volume des Oiseaux de ma 'Faune des Vertébrés de la Suisse,' en face du silence que j'ai cru devoir garder soit quant au Waldrapp, *Corvus sylvaticus* de Gessner (Conradi Gesneri Historiæ Animalium, liber iii., qui est de 'Avium Natura,' Tiguri, M.D.L.V., pp. 337 et 338), soit relativement au mémoire publié sur "*Comatibis eremita* (Linn.), a European Bird," par l'Hon. W. Rothschild, le Dr. E. Hartert et O. Kleinschmidt (Novitates Zoologicæ, vol. iv. pp. 371–377, pls. viii., ix., x.), et à l'article de O. Kleinschmidt sur *Geronticus eremita* L., imprimé dans le nouveau 'Naumann' (vol. vii. pp. 199–202).

Si je me suis tu jusqu'ici, c'est dans l'idée que Gessner avait été mal renseigné ou induit en erreur, et que les rapprochements proposés par les auteurs précités sont fort discutables. J'aurais certainement continué à me taire si vous ne m'eussiez, pour ainsi dire, mis en demeure de donner mon avis. Que les trois éminents ornithologistes qui ont signé l'article des 'Novitates' veuillent bien me pardonner de ne pas partager ici leur opinion.

Quoique grand admirateur, comme Zoologiste et comme Suisse, des ouvrages fondamentaux de Gessner, je ne puis me défendre de partager plus ou moins la conviction de mes prédécesseurs en Ornithologie Suisse, Meisner, Schinz, Steinmüller et autres, qui, après examen sérieux de la question, sont arrivés à la conclusion que la crédulité du grand naturaliste du XVI^{e} siècle avait été surprise dans le cas particulier ; que les données du texte, ainsi que les caractères de la figure fournie par cet auteur, ne représentent qu'un composite hétérogène de renseignements partie vrais, partie fantaisistes et malheureusement insuffisants.

La description de Gessner permet, en effet, les rapprochements les plus variés, et la biologie qui l'accompagne parait reposer en grande partie sur des racontages ou des *on dit* qui peuvent être tout aussi bien rapportés à un oiseau qu'à un autre, pourvu que celui-ci soit noir et à reflets verts, avec bec et pieds rouges.—Et cependant, Gessner avait lui-même déjà fait justice des données par trop dubitatives et des élucubrations contradictoires de Turner, en récusant franchement tout rapprochement de son *Corvus sylvaticus* avec le *Corvus aquaticus* d'Aristote (*Phalacrocorax* de Pline) ; parce que, selon lui, le *Corvus sylvaticus,* à pattes assez longues, n'était pas palmé, tandis que le *Corvus aquaticus,* à pattes courtes et fortes, devait l'être probablement. Je dis probablement, parce qu'il est difficile de peser la valeur des appréciations d'un auteur capable de dire, comme Turner, qu'il a certainement eu l'oiseau entre les mains, mais qu'il ne se souvient pas bien s'il était palmé et s'il avait la tête chauve : "Verum. licet avem in manibus habuerim, an palmipes fuerit, necne, et calva, non bene memini."

Si la taille un peu trop grande, la présence d'une huppe, les proportions du cou et du bec, la brièveté de la queue, la nudité du bas de la jambe et la longueur des tarses peuvent être difficilement rapportées au *Coracia* ou *Fregilus graculus,* duquel divers ont rapproché le Waldrapp de Gessner, la taille, par contre trop petite, les doigts complètement fendus ou séparés, les lorums emplumés et la position de la huppe, parieto-occipitale, semblent à leur tour interdire tout rapprochement avec l'*Ibis comata* d'Ehrenberg et de Rüppell, la *Comatibis eremita* des auteurs de l'article des 'Novitates."

Quelques ornithologistes ont vu dans la nidification du Waldrapp (Steinrapp) sur des ruines de vieux châteaux, dans les montagnes suisses, une indication rappelant les allures du Crave ou Coracias (Alpen ou Steinkrähe) qui, en effet, comme je l'ai vu encore, a établi souvent son nid sur de vieux châteaux dans les Grisons. D'autres ont voulu trouver dans le nombre réduit des œufs, deux à trois, chez cet oiseau, et dans le mélange de grenouilles et de poissons à son alimentation des faits militant en faveur de sa détermination comme *Ibis.* Mais, la nichée était-elle complète, et peut-on tabler, quant à l'absorption de grenouilles et de poissons, sur une donnée au sujet de laquelle Gessner lui-même disait sagement; comme j'entends dire qu'ils mangent ("eos vesci audio").

La base de l'identification tentée des *Corvus sylvaticus* et *Comatibis eremita* paraît reposer surtout sur le rapprochement que semble autoriser Gessner de son Waldrapp suisse avec les *Corvo spilato* et *Phalacrocorax* d'Italie, alors qu'il dit, à propos de ce dernier (bien différent), qu'il devient chauve avec l'âge, comme il l'a constaté. L'auteur lui-même n'était cependant pas bien convaincu de l'identité de ces deux oiseaux, quand, après avoir parlé de la huppe céphalique postérieure de son *Corvus sylvaticus,* il ajoutait, un peu plus loin : je ne sais si elle se retrouve chez tous et toujours ("capite retro crista tendit, haud scio an in omnibus aut semper").—Rien ne permet de supposer que cette huppe bien caractérisée soit le propre du jeune âge et que cet oiseau, à lorums emplumés et doigts entièrement fendus, puisse devenir un Ibis à tête chauve, avec bec pointu, plus arqué, et une semi-palmure entre les doigts externe et médian.

Il est également difficile de s'expliquer comment on a pu identifier deux oiseaux aussi complètement différents que ceux représentés par les figures de Gessner en 1555 et d'Aldrovande en 1603. Le *Corvus sylvaticus,* censé de Suisse (à tête entièrement emplumée, à bec faiblement arqué et assez épais, à cou allongé, à ailes ne dépassant pas la queue et à jambes relativement hautes, nues sur un assez grand espace au-dessus de l'articulation tibio-tarsienne), n'a rien commun avec *le Phalacrocorax ex Illyrio missus* d'Aldrovande (à tête chauve, à bec arqué, très acuminé, à cou plutôt ramassé, à ailes beaucoup plus longues que la queue et à jambes courtes et épaisses, emplumées jusque sur le talon).

Ce premier rapprochement fait et accepté, on comprend qu'il semblât naturel de rattacher au produit de ce mélange : d'abord le "*Wood-Crow* from Switzerland," figuré par Albin, en 1736, censément d'après un sujet provenant de Suisse, et l'image fantaisiste de Bechstein, en 1791, puis l'*Ibis* (*Geronticus*) *comata* d'Abyssinie, figuré par Rüppell en 1845, et les excellentes planches données par Kleinschmidt de la *Comatibis eremita* (*Geronticus eremita*), en 1897 et 1899.

Pour moi qui ne puis admettre pareille assimilation, il y aurait deux espèces perdues, au lieu d'une, entre le milieu du XVI^e^ et le milieu du XVIII^e^ siècle ; ou bien il n'y en aurait point, et c'est à cette dernière solution que je suis contraint de me ranger, jusqu'à nouvel avis, comme d'autres l'ont déjà fait.

Je ne crois pas à l'existence en Suisse, et cela jusqu'à la fin du XVIII^e^ siècle, comme le disait encore O. Kleinschmidt au 6^ème^ congrès de zoologie, à Berne, en 1904, d'un grand Ibis d'Afrique qui aurait niché sur les ruines de nos vieux châteaux, dont on aurait recherché les petits comme mets délicat, et qui aurait passé inaperçu dans le pays, pendant près de deux et demi siècles, après la publication de Gessner sur son sujet.

L'identité des oiseaux d'autres contrées d'Europe tour à tour rapprochés du dit *Corvus sylvaticus* ne me paraissant nullement démontrée, il m'est impossible de m'expliquer la présence, à pareille époque, et l'isolement dans nos montagnes d'une grande espèce, aux formes exotiques et au brillant plumage, qui n'aurait laissé aucune trace ni dans les souvenirs ou les légendes, ni dans les écrits ou les annales du pays.

J. Wagner, décrivant sommairement et sans ordre les oiseaux les plus intéressants de la Suisse ('Historia naturalis Helvetiæ curiosa,' art. iii. de Avibus, p. 196), en 1680, alors que le prétendu Ibis aurait dû nicher encore dans le pays, se borne à extraire de Gessner, sous le titre de *Corvus sylvaticus* (Waldrab), les quelques caractères qui peuvent se rapporter au Coracias (*Fregilus graculus*), dont il distingue le Choquard, sous le nom de *Pyrrhocorax*, à la p. 206. Mais il n'ajoute pas un mot qui puisse faire supposer qu'il ait connaissance d'un autre oiseau auquel la description de Gessner puisse être appliquée.

Les manuscrits laissés par Scheuchzer, Sprüngli et le Dr. Johann Gessner qui, entre la fin du XVII^e^ et le milieu du XVIII^e^ siècle, rassemblèrent de nombreuses données sur les oiseaux des Alpes, ne nous disent rien du *Corvus sylvaticus* de Gessner. Si bien que Meisner ('Vögel der Schweiz,' von Meisner und Schinz), en 1815, croyait pouvoir écrire p. 58, "Gessner's *Corvus sylvaticus* (*C. eremita* L.) ist kein anderer Vogel als die Steinkrähe"; en ajoutant, "Wenn ihm nicht durch künstliche Zurichtung irgend eines andern Vogel damit ein Betrug gespielt worden."

L'opinion de Meisner paraît très motivée et justifiable. Cependant, je ne crois pas qu'il s'agisse ici seulement du Crave ou de la Steinkrähe (*Fregilus graculus*), car Gessner connaissait cette espèce, si ce n'est dans tous ses caractères, au moins assez pour en donner une figure bien reconnaissable, sous le nom de *Cornix cornubiæ*. D'autres oiseaux ont dû, à mon avis, intervenir aussi dans le choix des caractères morphologiques et biologiques du Waldrapp, tel qu'il a été présenté ou raconté à Gessner. Je me demande, en particulier, si l'Ibis falcinelle (*Plegadis falcinellus*), qui se montre de temps à autre, en passage ou égaré, dans le pays, volontiers déjà en été, n'a pas contribué pour sa part au narré des mœurs et allures du *Corvus sylvaticus* de Gessner. Pour ne parler que de biologie, la Steinkrähe aurait prêté son mode de nidification et le Falcinelle serait intervenu dans la question des migrations.

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Je regrette en tous cas beaucoup que les savants auteurs de l'article sensationnel des '*Novitates Zoologicæ*' n'aient pas davantage tourné leur attention du côté des Ornithologistes Suisses et du pays qu'ils prétendent doter d'une espèce exotique.

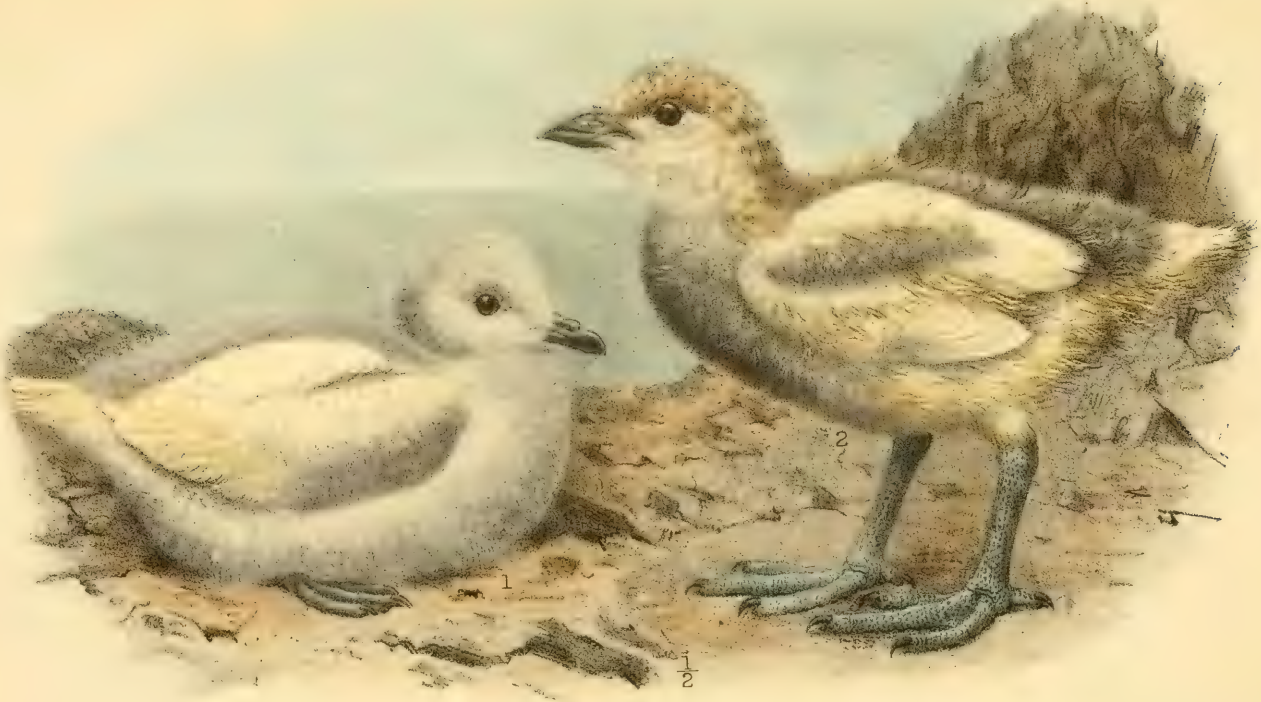
Le seule preuve irrécusable de la présence ancienne du *Comatibis* ou *Geronticus eremita* en Suisse serait la trouvaille d'ossements ou restes fossiles indiscutables de cet oiseau dans le pays; or ce témoignage manque jusqu'ici complètement.

P.S.—Kleinschmidt, dans une note, sous no. 2, à la p. 144 des publications du 6ème Congrès international de Zoologie, à Berne, en août 1904, volume sorti de presse le 25 mai 1905, à propos de sa communication sur les *Bedrohte Tierarten*, dit qu'il n'est plus possible d'admettre l'ancienne hypothèse représentant Gessner comme victime d'une erreur ou d'une supercherie au sujet de son *Corvus sylvaticus*. Les nombreuses traces de la présence du Waldrapp en Europe, les différentes figures rapportées à celui-ci, les connaissances de Gessner relativement au plumage de la tête, au contenu de l'estomac, au mode de vivre et aux passages de cet oiseau rendent tout doute impossible sur l'existence de cet Ibis en Suisse.

Qu'il me suffise de renvoyer, à ce propos, aux diverses remarques et comparaisons que j'ai déjà opposées dans cette petite note aux différentes allégations ci-dessus, pour montrer que, si le doute n'est à la vérité plus possible, c'est bien plutôt, me semble-t-il, en sens contraire; c'est-à-dire que l'existence d'un *Corvus sylvaticus* identique sur différents points en Europe et oiseau nicheur en Suisse jusqu'à la fin du XVIIIe siècle, paraît purement hypothètique et difficilement soutenable, avec les matériaux dont nous pouvons disposer aujourd'hui.

Encore une fois, je regrette de n'être pas ici de l'avis de M. O. Kleinschmidt, malgré l'autorité d'un ornithologiste aussi généralement connu et compétent.

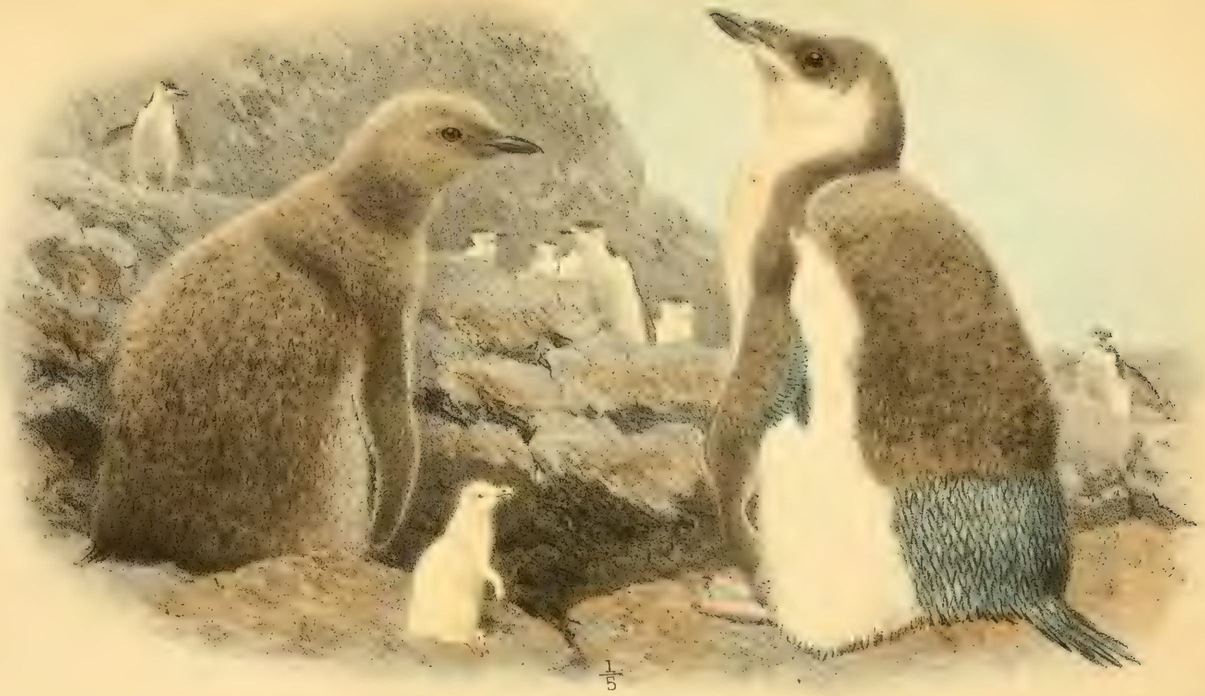
Ibis.1906 Pl.III.



H. Goodchild, del. et lith.

Bale & Danielsson, L^{td} imp

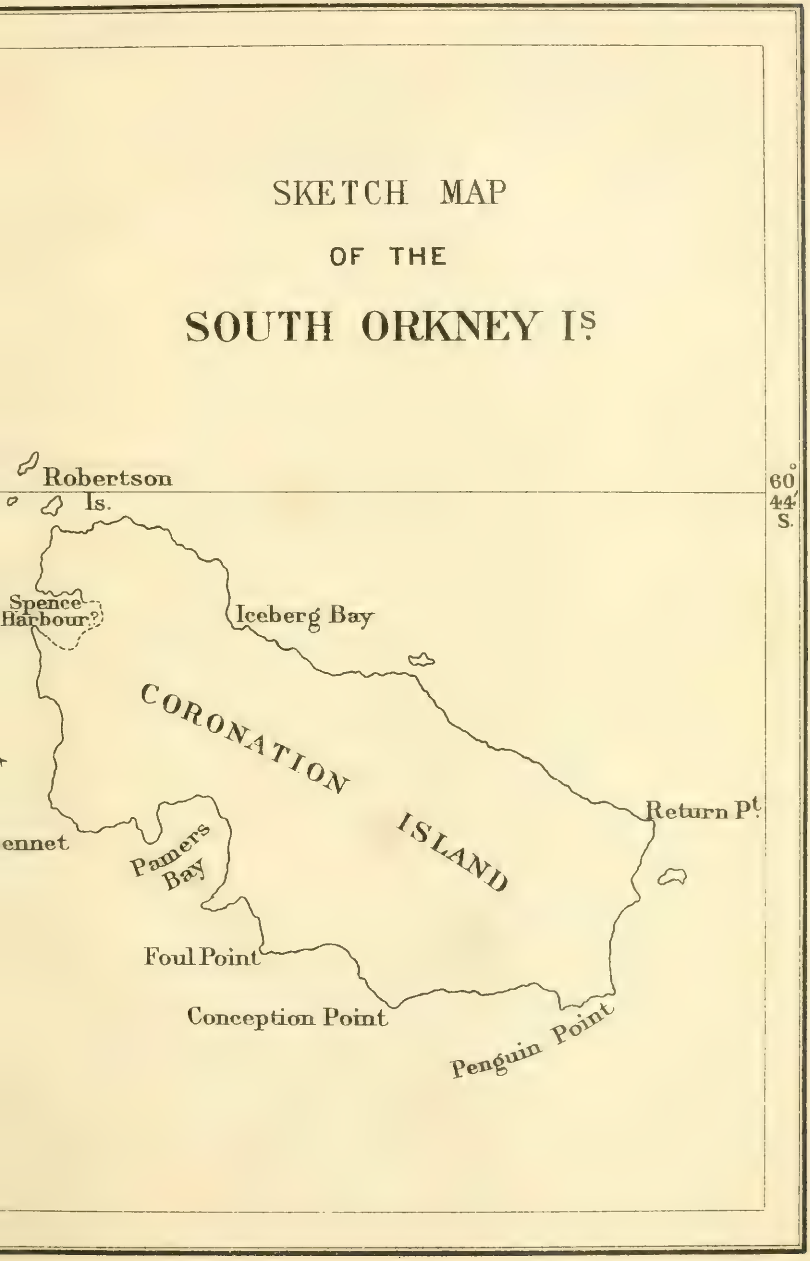
YOUNG OF (1) PAGODROMA NIVEA. (2) CHIONIS ALBA.



H. Goodchild, del. et lith.

Bale & Danielsson, Ltd imp.

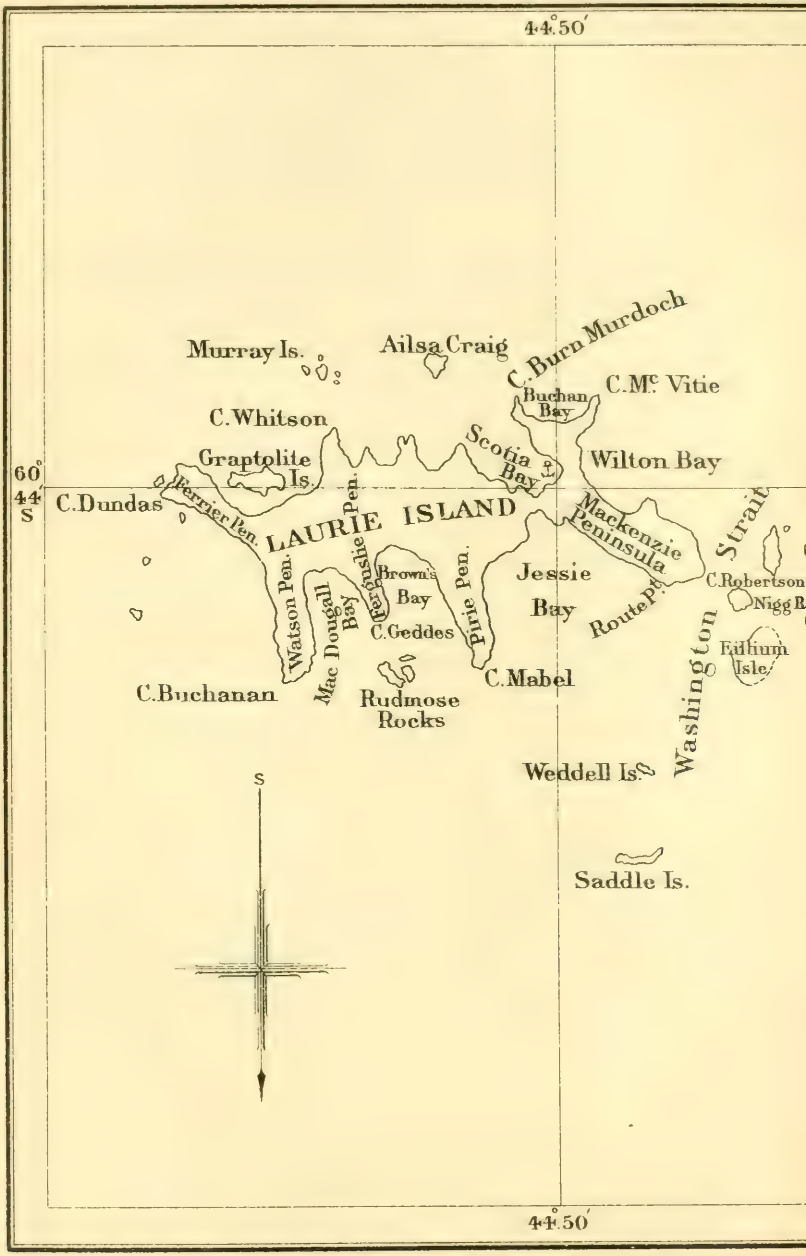
YOUNG OF PYGOSCELIS ANTARCTICA.

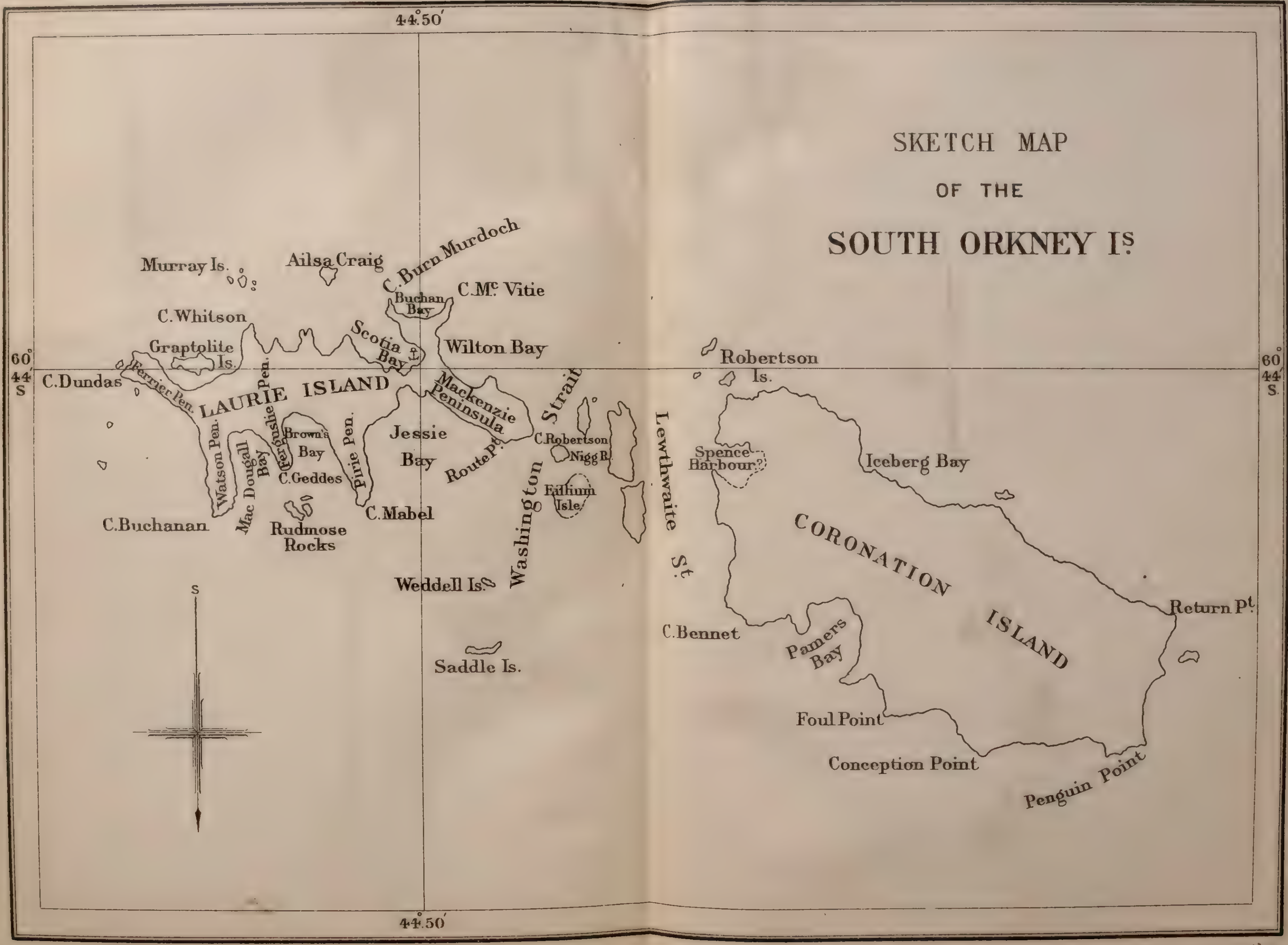


SKETCH MAP
OF THE
SOUTH ORKNEY I^s.

Robertson Is.
60° 44′ S.
Spence Harbour?
Iceberg Bay
CORONATION ISLAND
Return P^t.
ennet
Pamers Bay
Foul Point
Conception Point
Penguin Point

Bale & Danielsson L^{td} lith.


44°50′
60°
44′
S
C.Dundas
Murray Is.
Ailsa Craig
C.Burn Murdoch
C.Mc Vitie
Buchan Bay
C.Whitson
Scotia Bay
Wilton Bay
Graptolite Is.
Ferrier Pen.
Fergushie Pen.
LAURIE ISLAND
Mackenzie Peninsula
Strait
Watson Pen.
Mac Dougall Bay
Brown's Bay
C.Geddes
Pirie Pen.
Jessie Bay
Route Pt.
C.Robertson
Nigg R
Eilhium Isle
C.Mabel
C.Buchanan
Rudmose Rocks
Washington
Weddell Is.
S
Saddle Is.
44°50′



SKETCH MAP
OF THE
SOUTH ORKNEY I^s.

44°50'
60°
44'
S
C. Dundas
Murray Is.
Ailsa Craig
C. Burn Murdoch
C. Mc Vitie
Buchan Bay
C. Whitson
Graptolite Is.
Scotia Bay
Wilton Bay
Ferrier Pen.
Pen.
LAURIE ISLAND
Mackenzie Peninsula
Strait
Robertson Is.
Watson Pen.
Mac Dougall Bay
Ferguslie Pen.
Brown's Bay
C. Geddes
Pirie Pen.
Jessie Bay
Route Pt.
C. Robertson
Nigg R.
Spence Harbour?
Iceberg Bay
Eillium Isle
Lewthwaite St.
Washington
C. Buchanan
Rudmose Rocks
C. Mabel
CORONATION ISLAND
Weddell Is.
C. Bennet
Pamers Bay
Return Pt.
Saddle Is.
Foul Point
Conception Point
Penguin Point
S

Bale & Danielsson, L^td. lith.

X.—*Ornithological Results of the Scottish National Antarctic Expedition.*—II. *On the Birds of the South Orkney Islands.* By Wm. Eagle Clarke, F.R.S.E., F.L.S., Royal Scottish Museum *.

(Plates III.–XIII.)

The South Orkneys (see Plate V.) are a group of over a dozen islands situated between 60° and 61° S. lat., and 43° 3′ and 47° W. long. They lie some 600 miles S.E. by E. of the Falkland Islands, about 500 S.W. of South Georgia, and 200 E. of the South Shetlands. They were discovered by Powell in 1821, and were visited by Weddell in 1823, by Dumont D'Urville in 1838, and by Larsen in 1893. The descriptions furnished by these explorers were, however, meagre in the extreme, and until the visit of the Scottish expedition the South Orkneys remained among the least-known lands lying on the fringe of the South Polar Sea.

So far as their Ornis is concerned only two species of birds, and one of these problematical, have hitherto been alluded to—namely, the Ringed Penguin (*Pygoscelis antarctica*), of which a specimen was obtained on Weddell I. by D'Urville, and a Crested Penguin (*Catarrhactes*) described by Larsen.

The 'Scotia' visited the islands on her voyage south in February 1903; subsequently, having completed her first Antarctic cruise, she returned to the Archipelago towards the end of March and went into winter-quarters, remaining there for eight months, during which period much valuable geographical and zoological work was accomplished.

Only two of the islands are of considerable size—namely, Coronation I., which is the most westerly, and Laurie I., the most easterly.

Laurie I., where the 'Scotia' wintered, was the main scene of the labours of the expedition, and it is almost entirely upon observations and collections made during eleven months' residence there that the following contribution is based. The length of this island is about 12 miles, its maximum breadth 6 miles, and its area fully 30 square miles. The interior is lofty, and several of the summits reach to an altitude of from 2000 to 3000 feet. A number of deep bays run inland from north to south, separated by narrow rocky peninsulas or steep lofty mountain-ranges, and cause the island to have a very remarkable outline. All the valleys are choked by glaciers, and what little exposed rock is visible is precipitous in the extreme. Here and there on the lower slopes and at sea-level are a few acres of more or less level ground. In winter the whole island and even the faces of the precipitous cliffs are covered with snow, which does not commence to disappear till October and November (the late spring and early summer months); but then many patches of moss-covered ground are laid bare, some of them bearing soil from six to ten inches deep. Except this vegetable mould, there is little soil anywhere. The rocks, various kinds of graywacke, are mostly covered with lichens, especially *Usnea*, which, with various species of moss, form the entire terrestrial flora of the island.

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* For Part I. "The Birds of Gough Island," see 'The Ibis,' 1905, pp. 247–268.

Concerning climatic conditions, Mr. Mossman informs me that, in spite of their low latitude, the climate of the South Orkneys is essentially polar. One of the most powerful factors in determining the temperature of the air over this region is the cold antarctic current which carries streams of ice and numerous icebergs to a latitude corresponding with that of the northern part of England. The mean annual temperature, based on nearly two years' observations, was found to be 22°·7 F., the means of the seasons being summer 31°·4, autumn 22°·7, winter 13°·7, and spring 23°·3. The most remarkable feature was the low and equable summer temperature, which rarely rises above 37° or falls below 25°. In winter, owing to the freezing up of the sea to the south, the islands are virtually on the edge of a continent, and the temperature at that season is thus characterised by great variability, the range of the thermometer frequently exceeding 60° in twenty-four hours. If the wind is in the south, very low temperatures, as low as 40° below zero F., are recorded; but with a change of wind to the north the thermometer may rise, even in the depth of winter, above the freezing-point. Summer is characterised by almost continuously overcast skies, and the finest and clearest weather occurs in winter. Owing to the large amount of cloud which hangs over the islands in summer, the temperature is much the same as at places ten degrees further south. The snowfall is excessive, the sunshine is very deficient, and strong gales are frequent.

The first landing on the archipelago was effected at Saddle I., which was fortunately clear of ice, on February 4th, 1903. Here the explorers were met by a host of Ringed Penguins (*Pygoscelis antarctica*), which had a large "rookery," where many young and some eggs were found. Cape Petrels or "Pigeons" (*Daption capensis*), Sheathbills (*Chionis alba*), and Skuas (*Megalestris antarctica*) were also nesting, and specimens of both young and old were obtained. Gulls (*Larus dominicanus*), Giant Petrels (*Ossifraga gigantea*), and Shags (*Phalacrocorax atriceps*) were observed on the adjacent islets and rocks, and were apparently nesting there.

From Saddle I. the 'Scotia' sailed for the far south, and, having made a successful voyage in the southern waters of the Weddell Sea, the Expedition returned to the South Orkneys on March 21st. This was followed by a quest for suitable winter-quarters, during which Lewthwaite Strait and the east side of Coronation I. were explored, and, finally, on March 25th, a bay, afterwards named "Scotia Bay," on the south coast of Laurie I. (see map Plate V.) was selected.

It was now autumn and the birds were beginning to emigrate in search of more genial winter-quarters to more northern latitudes, or, in the case of some species, the nearest open water to the archipelago, wherever that may have been. Even in mid-winter (June and July) Laurie I. was not devoid of feathered inhabitants, for the following birds were observed more or less frequently, though not abundantly:—Snowy Petrels (*Pagodroma nivea*), Giant Petrels (*Ossifraga gigantea*), Gulls (*Larus dominicanus*), and Sheathbills (*Chionis alba*). The Skuas (*Megalestris antarctica*) and the Ringed Penguins (*Pygoscelis antarctica*) departed during the last days of April, and were followed by the Cape Petrel (*Daption capensis*) and the Adélie and Gentoo Penguins (*Pygoscelis adeliæ* and *P. papua*).

The first spring immigratory movements took place in October, when Cape Petrels, Adélie and Gentoo Penguins, Skuas, and Terns (*Sterna hirundinacea*) arrived in the order indicated, the last-named at the very end of the month. These were followed in November by Wilson's Petrel (*Oceanites oceanicus*), the Ringed Penguin, and the Silver Petrel (*Priocella glacialoides*).

With the return of spring the explorers were busy and journeys were undertaken in various directions, while a camp was established on the northern shore of the island, which was productive of excellent ornithological results, but had unfortunately to be abandoned at an interesting period on account of the break up of the ice.

After having been icebound for eight long months, the 'Scotia' was liberated on November 23rd, 1903, and immediately departed for the Falklands and Buenos Ayres to refit; but a party under the charge of Mr. Mossman, the meteorologist, and Dr. Harvey Pirie, the medical officer and geologist, was left to carry on the various observations and investigations and to make collections throughout the summer months. It is to the assiduous labours of Dr. Pirie that we owe most of our knowledge of the bird-life of the island during this most interesting part of the year, and he has earned the best thanks of ornithologists for the vast amount of valuable work which he accomplished.

During the summer bird-life was extremely abundant. Rookeries of the three species of Penguin (*Pygoscelis*) were numerous on the low rocky shores and less steep cliffs on various parts of the coast. Some of these bird-cities contained several millions of inhabitants, and their daily life presented scenes so remarkable as to be almost beyond description. The cliffs and their screes were the home of several species of Petrel, which resorted in great numbers to the ledges and crannies for nesting-sites, and the shores were the abode of the Gull, the Skua, and the Tern.

The Ringed Penguin, hitherto regarded as being nowhere an abundant species, was found to have its metropolis at the South Orkneys, where the summer population on Laurie I. alone was estimated at not less than one million birds.

The finding of the eggs of the familiar Cape Petrel (hitherto unknown to science) and of the chicks and young of the Ringed Penguin and the Snowy Petrel, the remarkable extension of the known range of the Macaroni Penguin (*Catarrhactes chrysolophus*) and of *Fregetta melanogaster* (which was undoubtedly breeding) were also among the results of the summer's work. Eggs of Wilson's Petrel, the Sheathbill, the Blue-eyed Shag (*Phalacrocorax atriceps*), and other well-known Antarctic species were also obtained, some of them in great abundance. The collection of bird-skins, too, was largely augmented.

The series of bird-skins is one of the most important ever made in the Antarctic Seas. It comprises one hundred and forty-three specimens, representing sixteen out of the eighteen species now known to frequent the islands and their immediate vicinity; while the eggs number several thousands. Many of the skins afford additional information concerning little-known phases in the plumage of several species, and enable me to describe for the first time the young or immature stages of others, such as the Ringed Penguin, Shag, Snowy Petrel, and so forth.

Add to the above slight summary of the bird-work accomplished the innumerable notes on and accounts of the nidification and other habits of not a few little-known species, and the investigations on their periods of incubation and the dates of their arrival at and departure from their summer-haunts, and we have an outline of the Ornithological Results obtained by the Scottish National Antarctic Expedition at the South Orkneys—results of the first importance, and meriting the full recognition, the sincere thanks, and the most hearty congratulations of all interested in our favourite science.

On the return of the 'Scotia' from the Falklands, the members of the Expedition, save Mr. Mossman and another, embarked, and the South Orkneys were finally quitted on February 22nd, 1903, for the southern shores of the Weddell Sea—the Antarctic Continent, the then-discovered Coats Land.

In the preparation of this contribution I feel conscious that I have laboured under one very great disadvantage, namely, that of not having been a member of the Expedition, a circumstance which must naturally result in unavoidable shortcomings. Much valuable information, both written and verbal, has, however, been placed at my disposal, including the official Zoological Log and full and interesting notes from the private diaries of Mr. Bruce, Dr. Pirie, Mr. Rudmose Brown, Mr. Wilton, and Mr. Mossman. Mr. Mossman, at the request of the Argentine Government, spent a second winter and summer at Laurie I., engaged in meteorological and magnetic work, and he has most kindly supplied me with some additional information on bird-life made after the departure of the Scottish Expedition. To all these friends I desire to express my deep indebtedness and my sincere thanks. My friend Mr. Norman B. Kinnear has also earned my acknowledgments for his assistance in classifying records.

I propose to conclude this section of my contribution by instituting a comparison between the avifauna of the South Orkneys with that of the nearest regions lying to the South and North of them, and with that of the Antarctic Continent.

Before proceeding to do this it will be well to remark that the avifauna of the South Orkneys, as at present known, comprises 19 species; of these 13, perhaps 15, are natives, *i. e.* breeding birds.

Turning our attention first to the south, and comparing the avifauna of the Orkneys with that of the South Shetlands, which lie to the south and west, we find a remarkable similarity between the ornis of the two archipelagos. This similitude is no doubt due to analogous climatic and other conditions influencing both animal and vegetable life. As regards their bird-life, the two groups are practically identical, the Orkneys only claiming one nesting species which does not occur in the Shetlands, namely, the Petrel *Fregetta melanogaster*; while I am not aware that the latter group possesses a single native species not found in the Orkneys.

When, however, we come to extend our ornithic survey to the nearest northern land, South Georgia I., the result is entirely different. Here we find that while there are 9 * native birds common to both, South Georgia has at least 12 † which do not breed in the Orkneys, while the latter isles can only claim 3 which do not summer in Georgia, namely *Pygoscelis adeliæ*, *Phalacrocorax atriceps*, and *Sterna hirundinacea.* When we examine and compare the climatic conditions prevailing at these two stations we have the key to these marked differences. In South Georgia, though only six degrees north of the South Orkneys, the mean summer temperature, Mr. Mossman informs me, is 8°·8 higher, while autumn, winter, and spring are respectively 11°·6, 15°·9, and 10°·7 warmer. At South Georgia the lowest temperature recorded was 9°·9 above zero, while at the South Orkneys 40° below zero has been registered. In South Georgia no less than 13 species of flowering plants (Phanerogams) are known: in the South Orkneys not one.

Extending our survey in like manner to the far south, and comparing the avifauna of the South Orkneys with that of the Antarctic Continent, we find that the latter has only 3 native birds not summering in the Orkneys, namely the stately *Aptenodytes forsteri*, *Megalestris maccormicki*, and *Sterna macrura antistropha* Reichenow. The birds common to both are also 3—*Pygoscelis adeliæ*, *Oceanites oceanicus*, and *Thalassœca antarctica.*

The final instalment of the ornithological results of the

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* These are *Pygoscelis antarctica* and *P. papua*, *Fregetta melanogaster*, *Pagodroma nivea*, *Ossifraga gigantea*, *Daption capensis*, *Larus dominicanus*, *Megalestris antarctica*, and *Chionis alba.*

† *Aptenodytes patagonica*, *Catarrhactes chrysolophus* (possibly a breeder at the S. Orkneys), *Pelecanoides exsul*, *Garrodia nereis*, *Majaqueus æquinoctialis*, *Prion desolatus*, *Diomedea exulans*, *Phœbetria fuliginosa*, *Sterna vittata georgiæ*, "*Phalacrocorax carunculatus* Gm. (*P. albiventer* Less.)," *Querquedula eatoni*, and *Anthus antarcticus.*

Scottish National Expedition will be devoted to the Birds of the Weddell Sea, southwards of the Orkneys, and Coates Land.

PYGOSCELIS ANTARCTICA (Forst.). (Plates IV., VI., & VII.)
Pygoscelis antarctica Cat. B. xxvi. p. 634.

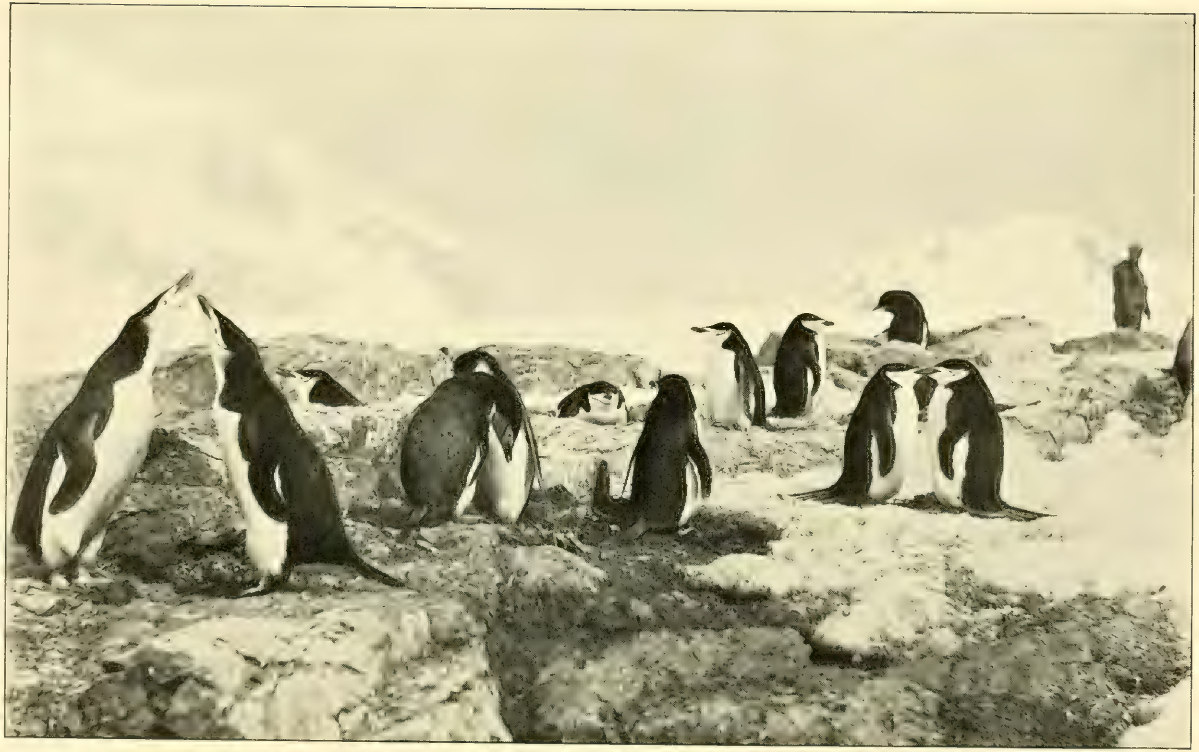
The Ringed Penguin is an uncommon bird in collections, and has hitherto been regarded as not an abundant species anywhere within the somewhat limited area in which it occurs; while its phases of plumage were little known except in the adult state.

Now, thanks to the work of the Scottish Expedition, we know that the species is extremely abundant at the South Orkneys; while the collections brought home enable me to describe all the stages of plumage from the newly hatched chick to the mature bird.

Although not nearly so numerous as its congener *P. adeliæ*, yet next to that species it was the most abundant of all the birds found at the South Orkneys, where the total number resorting to Laurie and Saddle Islands for the summer is estimated at over one million.

This species was first seen by the Expedition on February 2nd, 1903, in lat. 60° S., to the N.E. of the Archipelago. Here a party was observed, some of which were sitting on an iceberg, others on the water. Two days later the first landing on the islands was effected at Saddle I., where the explorers met with a vast concourse of these birds, and a number of specimens, young and old, and some eggs were secured. The rookery at this island is believed to be tenanted by not less than 50,000 birds.

On her return to the South Orkneys in the autumn after the first voyage to the Weddell Sea, the 'Scotia' encountered Ringed Penguins off the east coast of Coronation I. on March 23rd. On March 26th she went into winter-quarters in "Scotia Bay," Laurie I., and there these birds were observed until April 28th, on which date the last of the autumn emigrants were seen. They were entirely absent during the whole of the winter; and the earliest of the



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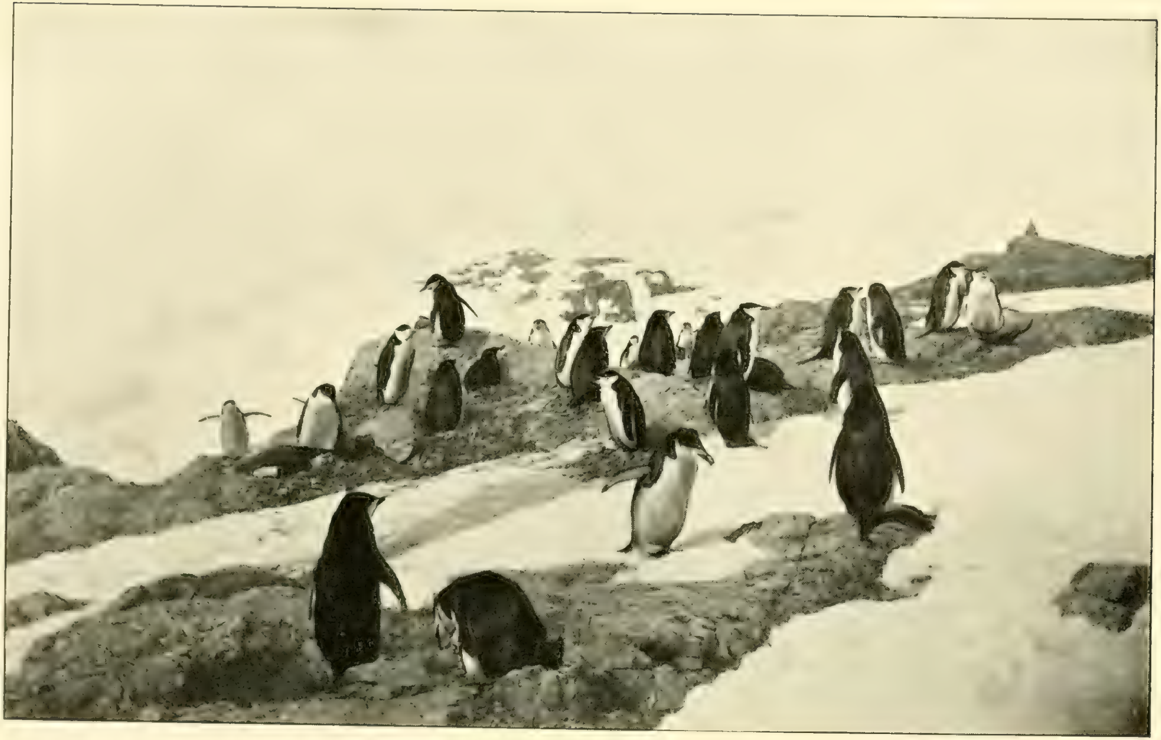
RINGED PENGUINS courting (Brown's Bay.)



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RINGED PENGUINS nest-building (Brown's Bay)

spring immigrants were noticed on November 2nd. On the following day a few more arrived, and the first bird to land walked straight up to a small moraine, picked up a stone, and laid the foundation of its new nest. After this date the immigrants were observed in varying numbers, many arriving on November 9th.

When walking over hard surfaces to reach their nesting-grounds, it was noticed that the birds maintained an erect position, marching in column of route; but when they came to soft snow they assumed a prone attitude and propelled themselves by means of their legs; when ascending a slope, or being chased, they brought their flipper-like wings into play, using them either alternately or synchronously; and when descending from any height they tobogganed.

Eight rookeries were found on Laurie I. The largest of these were at Cape Robertson and Ailsa Craig, each of which contained many thousands of nests. There were two other rookeries almost equal in size, but the rest were smaller, each tenanted by a few hundred birds, and situated at different places on the coast. On some of the off-lying Rudmose and Murray Islands there were jumbled rookeries of Ringed Penguins and Shags (*Phalacrocorax atriceps*). Dr. Pirie tells me that at Cape Robertson and Ailsa Craig the inhabitants of the great bird-cities were solely composed of the ringed species. At Cape Robertson, the birds occupied a strip of the coast about half a mile long extending over the low rocky foreshore and up the gently rising cliffs behind, until the farthest-inland birds must have been a couple of hundred yards from the sea, and at a height of two or three hundred feet above it. He reckoned that on average there would be about a nest to each square yard, and there could not have been much less than a quarter of a million birds. Here Dr. Pirie and two companions took 1000 eggs in a very short time on December 12th. Dr. Pirie had under more continuous observation a small congeries which had taken up its abode amidst the Adélie rookery at Point Martin, Scotia Bay. Here they constituted a small foreign element on fairly high ground, with their congeners higher up as well as all over the ground between them and the sea. Although massed together they apparently get on with their neighbours as well (or as ill) as with each other. The nests were poor affairs composed of a few pebbles, varied occasionally by the bones of deceased ancestors. Woe betide the inhabitant of these cities and villages that strays beyond the boundaries of his or her domain; then the beaks of all the Penguins around dart out at the intruder and soon drive it back to its own territory. There was one point where the path up the cliff was very narrow, and here a constant stream of Penguins of both species used to go up and down on their way to the water. Right on the track were some nests of the ringed species, and how these birds managed to hatch their eggs is a mystery, for all day long they were incessantly engaged in pecking at the passers by, who, though often in a hurry, frequently stopped and retaliated. The cry of this bird is harsher than that of the other species, and during the breeding-season it is active and always on the move, though at other times it is solemn and phlegmatic in temperament. Its pugnacious disposition made a visit to the rookery a painful adventure, for the protection of long sea-boots did not always suffice. This bird is a good strategist and believes in getting in the first blow. Dr. Pirie has seen one take a run of several yards, jump, and fasten on to an intruder above his boots, at the same time lashing out vigorously with its flippers. When on the beach or ice-foot mingled with other species, the Ringed Penguins seemed always to take the lead in entering the water. They took the lead, too, in repelling the attacks of the Samoyede dog "Russ." He could out-manœuvre any Adélie or Gentoo Penguin, but he had frequently to retire before the onslaughts of the present species, which would face up to him and sometimes deliberately attack him. It was decidedly the "boss" and jockeyed both the Adélies and the Gentoos.

Occasionally three eggs are laid, usually two, and sometimes only one. A considerable number of eggs were obtained, and these vary in size from 7·70 cm. × 5·40 cm. to 6·95 cm. × 5·50 cm. A small egg, one of a clutch of three, measured 4·43 cm. × 3·92 cm. The average weight of fresh eggs was 3·56 oz. The eggs seem to be little known. They vary in shape, some being almost perfectly oval, others more elongate in form and narrower at one end. In colour the majority of those in the collection are of a uniform very pale greenish white, with a thin coating of a chalky nature, such as is found on the eggs of Cormorants (*Phalacrocorax*) and other birds.

The first chicks were found on January 7th, 1904, and appeared to be about two days old; but this was not at the rookery where the first eggs were laid. The young, though hatched considerably later than those of their congeners, seemed to develop more quickly, and by February 11th some of them were beginning to shew the characteristic black ring.

In the autumn of 1904 Mr. Mossman saw this species for the last time on April 26th. The first bird seen in spring was noted on November 14th, and the first eggs of the season were found on November 27th.

The collection of skins contains only thirteen specimens of the Ringed Penguin, but these represent the species in all stages of its plumage, and include a magnificent albino example.

The following is an account of the various stages of plumage, most of them hitherto unknown, passed through by this species.

Chick (Laurie Island, Jan. 7th, 1904).—The newly-hatched chick differs somewhat remarkably from that of its congeners, since it lacks the dark or black head characteristic of *P. adeliæ* and *P. papua* and is entirely clad in silky-white down, except in the lower part of the abdomen, where it is partially naked. Bill black. Feet yellowish. (See figure Plate IV. It would have been more correct to figure this little bird in a nest rather than erect, but such a mode of treatment would not have shown it to advantage.)

Young in Down (Saddle Island, Feb. 4th, 1903).—There is a great change from the plumage of the chick to the full-grown young in down. The latter is densely clothed in short down resembling fur, the upper parts of which are mouse-grey, passing into pale whitish grey on the head and cheeks; the hind-neck is tipped with white and the lores are blackish. The under surface is drab-grey, paler in the centre of the abdomen; the chin and throat are blackish. Bill black. Feet yellowish. Wing 4·9 inches. Culmen 1·4 inches. Tail-feathers 1·5 inches. (See figure Plate IV.)

Young in Down and Feathers (Eillium Island, Feb. 22nd, 1904).—Has blue-grey feathers on the lower back, tail, sides of the back, and on the edge and tip of the wing; a band of blackish feathers on the crown and hind-neck; lores feathered black, and the rest of the upper surface covered with mouse-grey down. Under parts with pure white feathers on the abdomen, lower breast, and chin; upper breast and neck in whitish down with a dusky band across the throat, under which the characteristic black ring or bridle is in evidence. Wing 6·3 inches. Culmen 1·35 inches. (See figures Plate IV.)

Immature Birds in First Plumage resemble the adults, from which they only differ in having the back almost entirely blue, *i. e.* shewing little black. Here, again, this species differs from its congeners, which have more or less pronounced colour-characters associated with their first plumage.

Adults.—The old birds on their arrival in spring (November) have the blue and black of the upper surface very bright in tint, but as summer advances (February) the blue fades and the black assumes a brownish hue. In February, too, some are in deep moult, the under down shews through the scanty covering of contour-feathers, the feathers on the wings are ready to drop off in patches, and the birds are quite tailless. In March and April the new plumage has been assumed, with the exception of the tail-feathers, which are still quite short, and yet these are the first to be assumed by the otherwise downy young. The wing in the adult males measures from 7·1 to 7·5 inches, and in females from 6·75 to 7·2 inches.

The average weight of seven adult males taken on the 4th of February, 1903, was 9·1 lbs., the smallest scaling 7 lbs. and the largest 11·75 lbs. Eight females averaged 8·65 lbs., the smallest being 6·75 lbs. and the largest 10 lbs. On February 9th, 1904, Dr. Pirie got specimens weighing as much as 17 lbs.

The albino is an adult female, and the plumage is *entirely* pure white with a silky gloss. The bill is black and the feet are orange. It was obtained on the south beach of Scotia Bay on the 2nd of February, 1904.

PYGOSCELIS ADELIÆ (Hombr. et Jacq.). (Plate VIII.)

Pygoscelis adeliæ Cat. B. xxvi. p. 632.

Thanks to the researches of the Expedition, the northern range of this truly Antarctic species has been considerably extended, and the South Orkneys and their neighbourhood now mark the extreme limits of its ascertained distribution at all seasons of the year.

The Adélie or Black-throated Penguin is no doubt a resident bird in the Archipelago, for it was observed there all the year round, though only occasionally during the winter months, which were probably spent on the open sea in the vicinity of the islands.

This bird was first noticed in lat. 60° 30′ S. and long. 43° 40′ W. on February 3rd, 1903, when the 'Scotia' was nearing the South Orkneys. A number were then observed swimming after the ship in company with *P. antarctica*, while others were seen on the ice either lying down or squatting. Those walking on the floes presented a comical appearance, their gait resembling that of an "old salt" just ashore after a long voyage. In jumping from the water on to the ice they made remarkable leaps of several feet, but were not always successful and fell back into the sea. The species does not appear to have been observed at Saddle I., but at Laurie I. it was the most abundant of all the Penguins, and its numbers during the summer were estimated at not less than five millions.

Though a few were noticed throughout the winter of

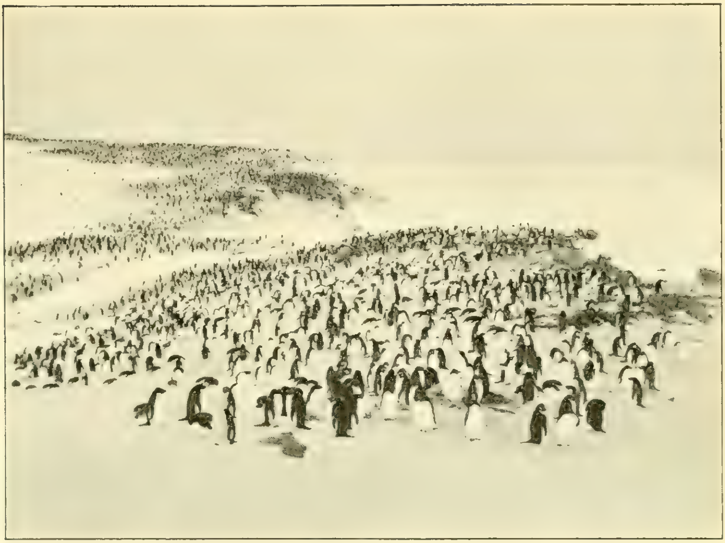
1903, it was not until October 7th (Oct. 8th in 1904) that the birds commenced to return to their summer-haunts. Over forty were then observed in Scotia Bay, most of them engaged in climbing up the rocks into the old rookeries as if they had come to stay. They were all in plump condition and travelled quickly, most of them moving on their bellies at full speed. On the 10th large bodies were making their way from the open water, and on arriving at the shore clambered up the rocks at once and made for the rookery. A party of these birds, accompanied by some Gentoos, was met *en route*, and as soon as the Adélies observed the intruders they hurried ahead, moving quickly on their bellies to meet the strangers, and on arriving moderately near they stood up, threw back their heads, and loudly screeched defiance; but they retreated on being approached, scuttling off in the prone position at full speed, followed by the more timid Gentoos.

Mr. Mossman noted that in the springs of 1903 and 1904 the first great arrivals of Penguins took place immediately after the last cold snap of the season.

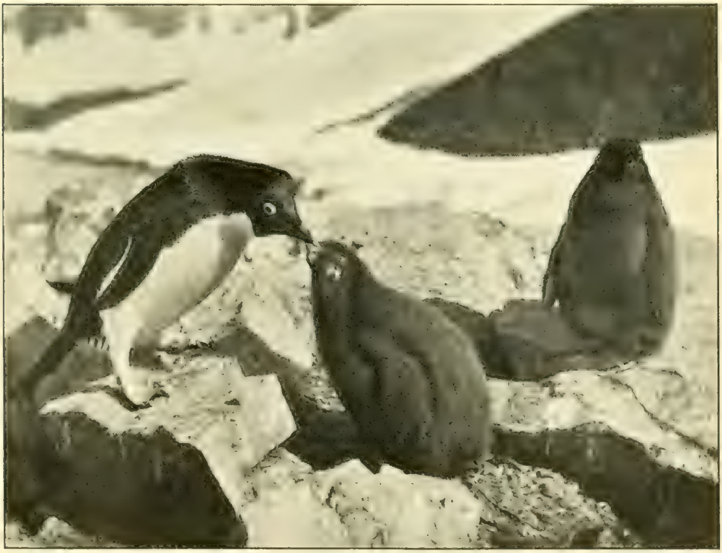
At Laurie I. and its off-lying islets no less than fourteen rookeries of Adélie Penguins were discovered. The largest of these was located on the Ferrier Peninsula, which for several miles was simply alive with these birds and some Gentoos, the former being not less than two millions in number. Another vast colony was on Graptolite I. (Plate VIII. fig. 1), and there were smaller though still extensive rookeries on the west side of Scotia Bay, on Delta Island, Point Rae, and on Watson and Pirie Peninsulas, with numerous lesser settlements on other parts of the coast and on various small islands.

The favourite sites for these communities were on plateaux where small stones abounded, and these were sometimes occupied up to 500 feet above sea-level. As the season advanced these rookeries became indescribably dirty, being masses of mud with pools of filth, and the birds themselves became correspondingly defiled.

At the rookery in Scotia Bay the first signs of nest-building were noted on October 10th. By the 20th nearly



ADELIE PENGUINS' Rookery on Graptolite Island.



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ADELIE PENGUIN feeding its young

all were paired, and the appearance of an unpaired bird gave rise to a fearful commotion, every bird trying to get a billful of feathers from the unhappy one, while all the Penguins in the vicinity raised their voices and screeched their loudest. The appearance of such wanderers, too, generally resulted in a free fight among those around.

The nests were heaps of stones deliberately collected one by one from far and near, even from under the snow. They were hollowed in the centre, and lined with some bones of their departed brethren, or with dropped tail-feathers when procurable. Some of the birds sat on the snow until it was thawed down to the stones beneath, and then set to work to form an irregular hollow in which to lay their eggs. A number of the nests became covered with snow, in some cases a foot deep, and several were deserted in consequence. The birds are accomplished thieves, and start their knavish tricks as soon as nest-building commences, but do not entirely desist when the young are hatched, though they then practise them to a lesser extent.

Three eggs are sometimes laid, but two is the usual number, and not unfrequently one only. The first egg of the season was found on October 29th, 1903. On the 31st, 739 were gathered on Delta I., which was covered with these birds. Between November 2nd and 10th, 2075 eggs were taken for domestic use, and as late as the 21st a number were obtained from a small rookery in Scotia Bay. The sitting bird incubates in a procumbent position, the mate standing erect by her side. The period of incubation was ascertained to vary from 31 to 33 days.

This species is very bold as compared with the Gentoo, and attacks fiercely anyone who enters the rookery. The birds had always to be forcibly evicted from their nests if the eggs were wanted. It was quite a business to go through a rookery unless attired in long sea-boots, and even then the birds sometimes got at the intruder unawares, taking a running jump and fixing on his legs above the boot, whence they were not easily shaken off. Other Penguins passing the nests came in for violent assault, and some were seen bleeding, while others were literally pecked to death. An angry bird ruffles the feathers on the back of its head and neck, draws back its head, and glares viciously with eyes and bill wide open. When the old birds leave the nest to go down to the water to bathe, it takes them a long time to make up their minds to enter the sea, and a whole crowd collects and walks up and down the ice-foot. They lean over the edge, as if about to dive, and then retire again and run off to another point to go through the same performance. When one makes the plunge a number of others immediately follow. After the dive they roll over and over in the water, and wash themselves thoroughly with the aid of their feet, gradually getting rid of the red dirt with which they are bespattered and smeared. On leaving the water they have to jump about four feet to reach the rock or ice. They often attempt to do this in places which are too high, and fall back into the water.

The first young were found on December 6th, but probably some of these were hatched on the 4th. Many were seen on the 11th. On the 18th a mother Penguin was observed feeding her chicks. She bent her head until her bill was inclined about 45°, *with the lower mandible uppermost*, and the chicks sucked in the semidigested food brought up, taking it from the hollow between the rami of the upper mandible. When the young were older they were fed as shewn in the picture (Plate VIII. fig. 2). Some young under a fortnight old were found to have already a small geological museum of pebbles in their stomachs. By January 7th, 1904, the young were beginning to lose their down. The rookeries at that date were in a greater state of filth than ever, and the stench was almost unbearable. On February 11th not a single old bird was in the rookery or in the bay, and only a very few young were seen. They had evidently all gone out to sea.

In 1904, Mr. Mossman informs me, the first spring immigrants were noted on October 8th, followed by several hundreds on the 14th, after which they were continually arriving at the rookeries. On November 2nd the first egg was found, and the first chick emerged on December 12th.

The collections contain forty-five specimens, in all stages of plumage, from the South Orkneys; also a large number of eggs.

As the various stages of plumage of this species have been carefully worked out from the material collected by the 'Southern Cross' Expedition, very little remains to be said on the subject. I would remark, however, that of the thirty-four adult specimens before me, obtained at all seasons, not one resembles the figure of the adult bird on plate vii. of the 'Southern Cross' Collections. In all the South Orkney specimens of this handsome species there is much less blue on the back, where black is the predominant colour, and the head and throat are almost entirely black, the feathers of the head being merely tipped with blue.

Immature birds shew more blue and less black on the upper surface than adults. Some obtained in February, and presumably about a year old, have the chin entirely black and the throat a mixture of black and white. And these same birds vary in the extent of the black apical spot on the under surface of the wing: in some it is developed, in others it is practically absent. This black apical spot cannot be regarded as a sign of maturity, as some young birds have it more developed than certain adults—indeed, one white-chinned example has this spot more pronounced than any other specimen in the collection.

A fine albinistic male was captured on the south beach at Laurie I. on January 11th, 1904. The plumage of its upper surface is cream-coloured, washed with pale brown on the hind-neck and crown; the tail, wings, and under parts are white, except the chin and throat, which are brown and indicate that the example is an adult; the bill and eyes were normal in colour; and the feet pale on both surfaces.

A series of measurements taken in the flesh, and of the weights, revealed the fact that there was great diversity in the size of the adults. The males varied in total length from 28 to 33·1 inches, and their wings from 7.1 to

7·7 inches; the females from 27 to 30·8 inches, and their wings from 7 to 7·4 inches.

As regards weight, it would seem that by the end of the nesting-season the weight of birds of both sexes had run down to a low ebb, indicating, perhaps, that they had been drawing on the stores of fat laid up since the previous autumn. In April males ranged from 7·25 to 10 lbs., while in October the lightest bird scaled 11·5 lbs. and the heaviest 14·1 lbs. Females in April ranged from 6 to 8 lbs., and in October from 9 to 13 lbs. These results were based upon a large number of specimens.

The temperature of this species was found to be as high as 106° F.

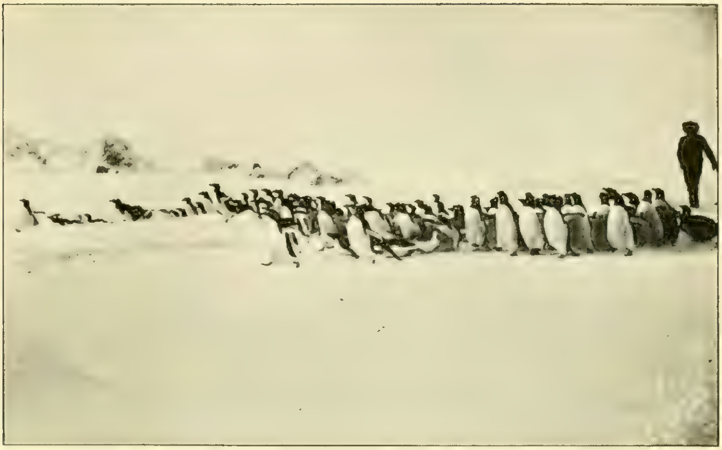
Pygoscelis papua (Forst.). (Plate IX.)

Pygoscelis papua Cat. B. xxvi. p. 631.

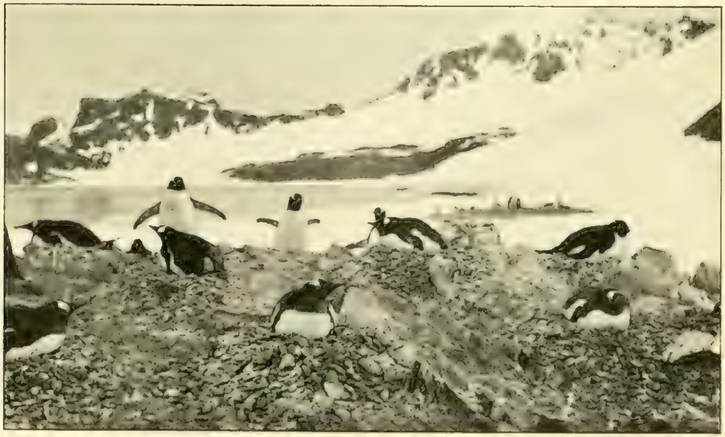
The Gentoo Penguin, which nears the southern limits of its range at the South Orkneys, was only found in small numbers as compared with its congeners, the total number at Laurie I. being estimated at 100,000 birds. It was confined to four or five rookeries, in which it nested in company with *P. adeliæ*.

This species was first met with by the Expedition at Saddle I. early in February, though no mention is made of its nesting there, and later in the season it was observed off Coronation I. on March 23rd. At the winter-quarters in Scotia Bay many were observed departing late in March and early in April, and the last of the autumn emigrants went north on April 25th. Not all of them departed, however, for a few were occasionally seen during the winter months of May, June, and July. They increased in numbers during the third week of August, and the spring return movements set fairly in by September, on the 25th of which month they appeared at the rookery on Cape Dundas, while numbers arrived from the north as late as November 5th.

On October 18th many were observed on their way from the open water to a big rookery, in company with *P. adeliæ*. On reaching the shore they at once clambered up on to the



Departure of GENTOO PENGUINS (Scotia Bay, April 1903.)



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GENTOO PENGUINS and their nests (Scotia Bay.)

rocks forming the breeding-ground. Here the Gentoos occupied the lower and less favourable sites, and formed a ring, as it were, round the Adélies. This was, no doubt, due to the fact that many of them wandered about aimlessly for some time ere commencing nesting, and thus allowed all the more desirable sites to be occupied by the other species.

The nest was a much better and larger structure of stones than that of its congeners, *P. adeliæ* and *P. antarctica*, being from seven to eight inches high, and containing some old tail-feathers and a few bones. The birds, too, were cleaner than the rest all through the season. They were, however, great thieves, so far as pilfering nesting-materials was concerned.

On November 14th many of the nests became snowed up, and some of the birds sat in more or less deep holes in the snow; many, too, were completely covered.

The first eggs were laid on November 6th. They were usually two in number, frequently only one, never three. In shape they were very uniform, and rounder than those of *P. adeliæ*. The period of incubation was found to vary from thirty-one to thirty-five days.

The birds are somewhat timid; a few of those incubating were bold enough to peck at human intruders, but the majority ran off their nests when approached. They were a little more courageous after the young were hatched, but even then some of them deserted their chicks without making any pretence at protection. They, however, fought fiercely among themselves, using both wings and bills, giving some hard smacks and sharp bites.

The young birds did not commence to lose their down until February 11th; but on one or two the white band across the crown had already begun to shew itself, and the neck to darken in colour.

The collection of skins from the South Orkneys contains specimens in all stages of plumage, and many eggs were also obtained.

The newly hatched chick is clad in silky down and is of an olive-grey tint on the upper surface (darker, nearly black, on the head), but lighter beneath, and the bill is bluish grey. This stage soon gives place to a darker coat of down, to the tips of which the paler down of the first coat is attached for a time. In this second coat of down, the upper parts, including the head, are slate-grey, the plumes of the back having pale tips, and the under surface is white. When only a few days old, the bill begins to assume the orange tint characteristic of the adult birds.

The adults obtained in February are in faded plumage, and late in that month and during March and April had either moulted their tails or had that appendage only in an incipient stage of growth.

Eighty specimens, of mixed sexes, weighed on April 28th, 1903, varied from 8·5 to 13·75 lbs. Of these, the heaviest male scaled 13·75 lbs., the heaviest female 12·5 lbs.

CATARRHACTES CHRYSOLOPHUS Brandt.

Catarrhactes chrysolophus Cat. B. xxvi. p. 641.

The presence of this species at the South Orkneys is an interesting discovery, since it indicates a considerable extension in its hitherto-known range, for there was no reliable evidence before that the Macaroni Penguin had occurred south of the Falklands and South Georgia in the western Antarctic seas, or of Heard I. in their eastern waters.

Whether this species is an annual visitor, having breeding-grounds in the South Orkneys, must remain an open question; but it would seem not unlikely that such is the case, perhaps on some of the unexplored islands of the Archipelago.

Five specimens were obtained in 1904 in the Penguin-rookeries on Laurie I. These were mostly captured singly towards the end of summer, and are regarded as being more or less immature birds. Two of them, namely those last obtained, are decidedly younger than the rest, and have the merest indications of yellow feathers on the sides of the crown, and also small bills. The remaining three are considered to be not fully adult, and have well-developed tufts of golden-yellow (not orange) plumes, but are otherwise mature in plumage and in the dimensions of their bills.

The two younger birds are, there can be little doubt, birds of the year, and their presence seems to point to the South Orkneys being their native land, for it is difficult to believe that birds only a few weeks old could have accomplished the rough sea-passage of 600 miles from their nearest-known breeding-station at South Georgia.

The three older specimens, though not fully adult, are probably about a year old, though whether this species breeds at such an age is uncertain.

None of these birds were observed in the autumn of 1903, when the Expedition arrived, and their appearance in the summer of 1904 was a surprise to the explorers.

The first specimen, a male, was captured on January 7th in a big Penguin-rookery at Scotia Bay, where it was found amongst a crowd of *P. adeliæ.* Ten days later a female was secured in exactly the same place; and on the 29th of January another male, just below where the previous captures had been made. These three were the not fully adult birds alluded to, and the place where they were taken was so frequently visited that it is thought to be most unlikely that they could have been bred there without being detected.

One of the younger birds was taken higher up in the same rookery on December 29th, and the other was captured on the beach on February 6th. Both were males.

Regarding the age of these specimens I was somewhat uncertain, and sought the assistance of my friend Dr. A. E. Wilson, of the 'National' Expedition, who has had considerable personal experience with the allied *Catarrhactes schlegeli*, and whose aid it is a pleasure to acknowledge.

In connection with the occurrence of this species at the South Orkneys, it is well to recall the fact that Capt. C. A. Larsen, of the Norwegian sealer 'Jason,' informed Dr. Donald *, of the whaler 'Active,' that he saw a rookery of Crested Penguins on the South Orkneys. These birds he described as being intermediate in size between the Emperor and Adélie Penguins, and as having a yellow patch under each eye [? the yellow angle of the gape] and a red superciliary crest three or four inches long. This might well be regarded as a glorified description of fully adult examples of the present species.

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* *Cf.* Proc. Roy. Phys. Soc. Edinburgh, xii. p. 335.

It is probable, too, that this is the species of *Catarrhactes* observed and obtained by the Swedish Expedition on Nelson I., one of the South Shetlands, which was thought to belong to *C. chrysocome*. Most unfortunately the specimens were lost with the wreck of the Expedition (*cf.* Lönnberg, Wiss. Ergebn. d. Schwedischen Südpolar-Exp. Bd. v. Lfg. 5, p. 3).

[APTENODYTES FORSTERI G. R. Gray.

Aptenodytes forsteri Cat. B. xxvi. p. 626.

The Emperor Penguin claims mention for the South Orkneys on the strength of the following incident:—

On November 21st, 1903, two sailors reported having seen, by some open water at the mouth of Scotia Bay, a large Penguin, which was "three times the size of an Adélie," but having black feet and a bill like a Gentoo, though with no mark on the head like the latter species.

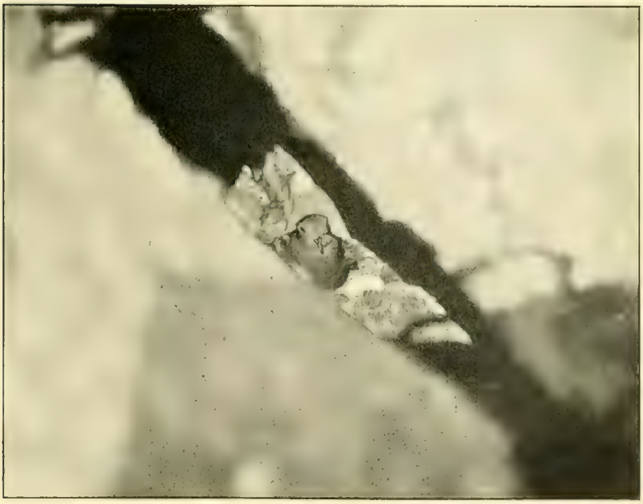
The bird unfortunately escaped into the water when the men attempted to capture it. There can be no doubt about the size of the bird having been correctly described, as the Adélies were close at hand for comparison. The two men who reported these facts were among the most careful and trustworthy of the crew, and the conclusion come to at the time was that the bird seen by them was an immature Emperor Penguin.]

OCEANITES OCEANICUS (Kuhl). (Plate X. fig. 2.)

Oceanites oceanicus Cat. B. xxv. p. 358.

Wilson's Petrel is a common summer visitor to the Archipelago, and though not nearly so abundant as either the Cape or Snowy Petrels, yet resorts in thousands to Laurie I. to nest on the cliffs of its remarkably extensive coast-line. It was also observed at Saddle I. during the

CAPE PETREL by its nest.



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WILSON'S PETREL on its nest.

short visit of the Expedition on February 4th, 1903, and was probably breeding there.

In the autumn of 1903 it was last seen on March 23rd, as the 'Scotia' was approaching the islands from the south, on her first voyage from the Weddell Sea. It was never observed during the winter months, and did not appear until late in the spring, namely on November 11th *, being the last of the summer visitors to arrive. On the 23rd the ice broke up and many birds arrived, including numbers of this species. After this date it was constantly under observation, for several dozens took up their abode in the cliff above the observatory, where, on December 11th, the first egg was obtained.

There was no attempt at nest-making, the egg was simply laid in a hollow in the earth in narrow clefts and fissures in the face of the cliffs, under boulders, and sometimes under stones on the screes sloping from the foot of the precipice, at heights varying from 20 to 300 feet above sea-level. It was often placed far in, and this and the fact that the hole was so narrow made the egg difficult to procure. Some of the eggs were laid at such a distance from the entrance that a spoon had to be lashed to a long bamboo in order to reach them. The searchers could hear the low whistle uttered every few seconds by the sitting bird, but on reaching the spot whence it seemed to proceed the sound would appear to come from an entirely different direction. The dog "Russ" proved to be a great aid in work of this kind, for he easily detected the bird's presence by his keen sense of smell. When caught on the egg the birds brought up a reddish fluid, which issued both from the mouth and nostrils. In addition to the low whistle, these Petrels had a harsh screaming chuckle. These noises they kept up almost continuously after dark, especially on still nights.

They appear to return year after year to the same nesting-

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* This and other species appear to be remarkably constant as to the times of their appearance and departure at the South Orkneys. As an instance of this, it is interesting to note that Mr. Mossman observed the first Wilson's Petrel in the spring of 1904 on November 12th.

places, for both eggs and dead young birds of previous seasons were numerous in the tenanted holes containing the fresh eggs. This fact indicates that a very serious waste of life takes place in some seasons, if not annually. It may be accounted for by the late arrival of the bird at its breeding-stations, which, coupled with the lengthened period of incubation characteristic of all Petrels, results in winter setting in ere the eggs are hatched, or the young, which develop slowly, are old enough to leave the nesting-holes. Another, and perhaps more probable, explanation is that the disasters noticed were due to a succession of cold summers, which are actually known to have occurred. None of the eggs in the summer of 1903-04 had been hatched when the Expedition left the islands on February 21st. These facts would seem to indicate that the South Orkneys lie at the extreme limits of possible breeding for Wilson's Petrel. Indeed for many individuals of this species, perhaps all, during some seasons the climatic conditions place the islands distinctly beyond that range; though it breeds further south, most likely with similarly disastrous results.

From 7 to 11 P.M. these birds flitted about the cliffs and over the head of Scotia Bay in great abundance, and in striking contrast to their habit in the day-time, when only occasionally was one to be seen on the water, though there were probably many at sea off the islands.

The nest figured (Plate X. fig. 2) was situated at the bottom of a crack in the rock, about four inches wide and two feet deep. It was the only one found which was open enough to permit of a photograph being taken, and then only under particular circumstances as to time. At about 7 A.M. the sun shone for a few minutes directly into the crack, and it was during those moments that this unique picture was secured.

Eight eggs average 33·7 × 24 mm. The largest is 36 × 24 mm., and the smallest is 32 × 23 mm.

FREGETTA MELANOGASTER (Gould).

Cymodroma melanogaster Cat. B. xxv. p. 364.

On December 5th Dr. Pirie discovered a pair of unknown

Petrels. He heard a low whistling sound proceeding from a crevice in a rock on the east side of Uruguay Cove, Laurie I., and about fifteen feet above the sea, and on climbing up found what he at first thought to be a pair of Wilson's Petrels, and managed to secure the female. Two eggs, badly broken in the endeavour to capture the birds, were found near the mouth of the crack—one of them obviously of a previous season, the other deeply incubated.

On examining the captured bird it was at once evident that it was not a specimen of *Oceanites oceanicus*, for it had entirely black feet, had white on the under surface, the feathers of the back slightly edged with white, a longer and more hooked mandible, and strongly upturned nasal tubes. On the return of the Expedition, I found this bird to be an example of *Fregetta melanogaster*—the Black-bellied Storm-Petrel.

The dimensions of the egg secured were 3·60 × 2·55 cm., and correspond with those of *F. melanogaster*, from the Falklands and Kerguelen, in the British Museum Collection. The locality was again visited in the hope that the escaped bird might be found. It was not there, however, nor were other individuals of this species observed elsewhere in the islands.

The occurrence of this species is one of the most interesting ornithological discoveries made by the Expedition. It implies a remarkable extension in its known range, and removes the doubt which has hitherto overshadowed (*cf.* 'Antarctic Manual,' p. 228) the record of its having bred at South Georgia as mentioned by Pagenstecher ('Die Vögel Süd-Georgiens,' p. 18, 1885) in the Southern summer of 1882–1883.

THALASSŒCA ANTARCTICA (Gm.).

Thalassœca antarctica Cat. B. xxv. p. 392.

A few examples only of the Antarctic Fulmar were seen at the South Orkneys; but it is thought by the members of the Expedition that it may possibly have bred on the east side of the Ferguslie Peninsula, along with the Cape and Snowy Petrels, in the summer of 1903.

A number of these birds were seen in the previous autumn when the 'Scotia' was between Saddle I. and Cape Bennet, the northern limit of the Powell Is., on March 23rd, 1903. Several were again observed on the following day in Lewthwaite Strait, between Coronation I. and the Powell Is.

On June 1st, when winter was well advanced, Mr. Bruce noticed one flying round the 'Scotia'; and another is believed to have been seen at the open water in Scotia Bay on August 17th.

There are no South Orkney specimens in the Collection, but a number had been obtained in the Weddell Sea before the Expedition arrived at Laurie I. and went into winter-quarters there.

PRIOCELLA GLACIALOIDES (Smith).

Priocella glacialoides Cat. B. xxv. p. 393.

The Slender-billed Fulmar, or Silver Petrel, was observed in the summer of 1903, in MacDougall Bay, on the north coast of Laurie I., on November 4th. After this date examples were occasionally seen about the cliffs on the north side of the island during November and December, and it is considered highly probable that a few pairs were nesting there. The breeding-places of this bird, however, still remain to be discovered.

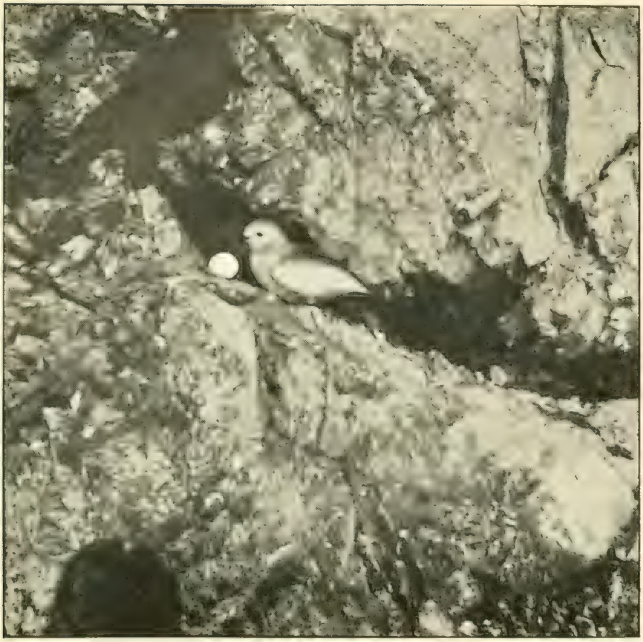
This species was first observed during the previous autumn, when a number came under notice between Saddle I. and Cape Bennet, the north end of the Powell Is., on March 22nd, 1903; and again on the following day when the 'Scotia' was in Lewthwaite Strait, between Coronation I. and the Powell Is., in search of winter-quarters. It was also seen in numbers off the N.W. end of Coronation I. on February 14th, 1904.

It had been seen commonly, and specimens obtained, in the Weddell Sea just prior to the date of the above observations.

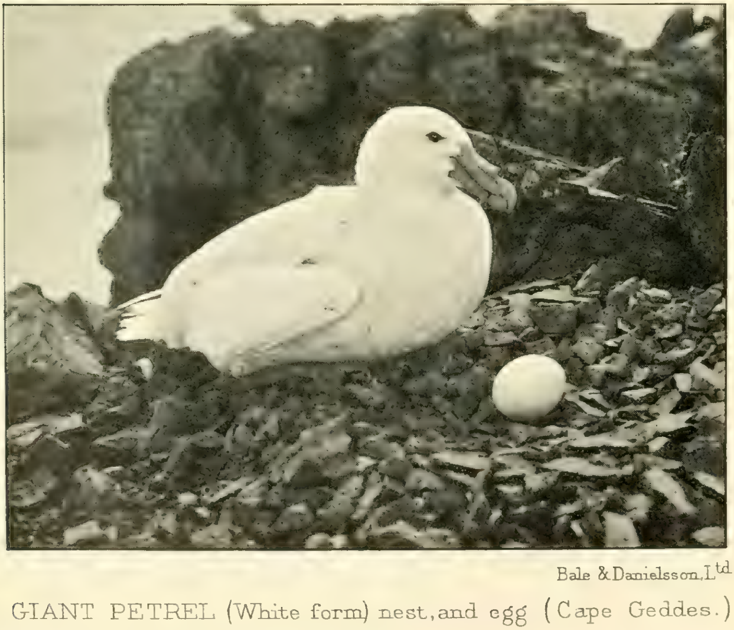
PAGODROMA NIVEA (Gm.). (Plate III. fig. 1 and Plate XI. fig. 1.)

Pagodroma nivea Cat. B. xxv. p. 419.

The Snowy Petrel of Cook was not only an abundant



SNOWY PETREL by its nest.



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GIANT PETREL (White form) nest, and egg (Cape Geddes.)

summer bird, but was by far the most numerous of the few species which remained for the entire winter at the South Orkneys.

In summer it frequented the high precipitous sea-cliffs which formed its breeding-haunts, and where, during the nesting-season, some 20,000 birds were estimated to be present on Laurie I. alone. It was never seen on the hills at the head of the ice-sheets.

It was also found at Saddle I. and was nesting there. The single eggs were laid under rocks, in caves, and in holes and crevices on the steep cliffs facing the sea, at heights ranging from a few to several hundred feet above the water. The nests were rough primitive structures and consisted of a few stones or a little earth. They were less accessible than those of the Cape Petrel, and mostly isolated ; but in one cave under Mount Ramsay a dozen or more eggs were taken. This bird does not fly off when its nest is approached, but retreats a little, and ejects an oily fluid at the intruder, uttering all the while shrill cries. (See Plate XI. fig. 1.)

The first eggs were obtained on December 2nd, but were not quite fresh. By the 4th all the birds seemed to have laid, and eighteen eggs were found, most of them in a cave from twenty to twenty-five feet above sea-level. The cave was thickly carpeted with the dung, and the nests, unlike the rough examples outside, were all well formed in the dung and had a few feathers in them. Some were placed as much as forty feet from the entrance, where it was almost dark. In 1904 the first eggs were observed on November 25th (*Mossman*).

Young birds were found on January 28th, 1904, but the parents were not present with their chicks—not an unusual circumstance during the daytime with certain birds of this order. When discovered these chicks uttered the same harsh notes as are characteristic of the old birds. Their stomachs were found to be crammed with crustaceans.

The young bird does not seem to have been described. One about one-third grown, and captured on January 28th, 1904, is clad in long fluffy down which almost conceals the feathers appearing on the wings and tail. The down is of a lavender-grey tint on the back and chest, darker on the head, and dull ivory-white on the abdomen. (See figure 1, Plate III.)

OSSIFRAGA GIGANTEA (Gm.). (Plate XI. fig. 2.)

Ossifraga gigantea Cat. B. xxv. p. 422.

The Giant Petrel was present at the Station all the year round, but was very much less numerous during the winter months. There was a decided falling off in May, but the lowest ebb was reached in June and continued until September, when the summer birds of this species commenced to arrive. During the nesting-season it was estimated that about 5000 were on Laurie I. alone, and when one remembers the savage nature and almost insatiable appetite of these giants, it is easy to realise what a terrible scourge they must have been to the Penguins, upon which and their eggs and young it was their one aim to gorge themselves to repletion.

They were to be seen everywhere in the summer-time, but their rookeries were confined to the north and east coasts. Three of these rookeries were visited, two of which, namely those on the Watson Peninsula, contained two hundred nests each, while the third at Cape Geddes comprised only about one hundred. One of the larger colonies was situated on bare rocky ground from 300 to 400 feet above sea-level, and the other on a moraine at an elevation of from 250 to 300 feet. The nests consisted of great piles of small angular stones, and were about two feet in diameter. The third and smaller rookery was on a low strip of ground between a cliff and the shore, and was close to the sea; the nests were similar to the others. Although these contained no eggs on November 3rd, yet the birds allowed a close approach, one of the parents sitting on the nest, the other usually standing close alongside.

The first eggs were laid on November 4th, but four only were found on that date. On the 19th, however, eighty were obtained, all single specimens, except in two instances where two were found, probably laid by as many females. The birds had to be pushed off the nests ere the eggs could be taken.

for very few flew away of their own accord. They shewed no fight when evicted, and usually sat down a yard or two away; nor did they shoot oil from their nostrils, but they vomited the contents of their stomachs, not as a mode of defence, but to get rid of ballast in order to take wing. They resorted to the same lightening process when chased. Unfortunately, the weather-conditions and those of the ice did not permit of these rookeries being again visited, so that the period of incubation could not be ascertained nor the capture of young be effected.

The average length of 80 eggs was 10·38 cm. and the breadth 6·57 cm.

This species was observed on Saddle I., and was thought to be breeding on the adjacent rocks.

The heavy toll ruthlessly demanded from the Penguins was very manifest on visiting their rookeries. Here abundant remains of recently killed young Penguins, in the shape of clean-picked skins and bones, were lying all around, while the gorged feathered giants were either waddling about or sleeping off the effects of their orgies on the neighbouring snow-slopes. They were observed to feed on dead seals, and during the winter resorted to the ship's refuse-heap in search of scraps of meat. They were very bold when in want of food, and one swooped down close to the cook and tore a piece of flesh off a dead Penguin.

The proportion of birds in pure white plumage in the rookeries was not more, perhaps less, than two per cent. The colour of the birds ranged from very dark brown through all shades of chocolate, and from grey through light grey and mottled white to white. Some of these facts indicate interbreeding between the two forms and, perhaps, between their offspring and typically coloured birds and others. Dr. Pirie thinks that they interbreed, because he has no recollection of seeing two white birds together on the nesting-grounds.

Four specimens in the collection are from the South Orkneys, and two of these are of the white form. The weight of these birds varied from 7·25 to 10 lbs.

Daption capensis (Linn.). (Plate X. fig. 1.)

Daption capensis Cat. B. xxv. p. 428.

Although the Cape Petrel or "Cape Pigeon" is one of the most familiar birds to voyagers in the southern oceans, and one, too, that has been known since the days of Dampier (that is to say, since the closing years of the 17th century), yet the eggs remained entirely unknown until December 2nd, 1903, when Dr. Pirie took the first specimens at the South Orkneys.

The three nests from which eggs were then obtained were placed on open exposed ledges of cliffs on the west side of Uruguay Cove, Laurie I., at heights of from twenty to a hundred feet above sea-level. The nests were composed of a few small angular fragments of rock and a little earth, and contained single eggs, which were quite fresh. When approached, the sitting birds ejected an evil-smelling reddish fluid composed of the semi-digested remains of crustaceans of the genus *Euphausia*. It was extremely disagreeable to the collector to receive it in his face when peering over a ledge, and the odour of it was found to cling to clothes for a very long time. The birds can squirt this fluid with great precision for a distance of six or eight feet. They did not leave their nests readily, and even allowed themselves to be captured while sitting. The pure white eggs seemed very large for the size of the bird.

On December 3rd three more eggs were obtained. There were six nests on the ledge where they were found, but three of them were empty. On the following day about two dozen eggs were taken on the cliffs under Mount Ramsay, and on the 5th some fifty eggs were found on the cliffs on the east side of Uruguay Cove. The birds seemed to be of a sociable nature, for several were frequently found nesting near to each other on the same ledge, but isolated nests were not uncommon.

The work of collecting the eggs of this species proved to be such an unpleasant business, owing to its nasty methods of defence already alluded to, that a long ski-pole was used. With this the birds were pushed off their nests, and the eggs secured without the captor being defiled. When thus removed they took short flights, and then alighted near the nest. Both birds were often found sitting side by side (one on the nest and the mate close alongside) and cooing and clucking to each other, though not to the same extent as during the month previous, when courtship was in full swing.

On December 12th more eggs were procured from the locality in which they were obtained on the 5th, and the nests robbed on that day, though still empty, were covered by sitting birds. On January 13th, 1904, a fresh egg marked on December 2nd was found chipped, so that the period of incubation was not less than forty-two days. On January 18th a chick five days old was taken for a skin, and young birds were still in down on February 5th, after which date the state of the ice did not permit of further observations being made ere the Expedition left for the far south.

It was noted that before laying its eggs this Petrel sits close on the nest for about a month, and it was also observed that it entirely disappeared from its nesting-haunts for some ten days before the first eggs were laid.

The eggs vary from oval to elongate-ovate in form. Taking two extreme forms, I find their dimensions to work out as follows:—Oval type, 56·5 × 43 mm.; elongate-ovate type, 67·2 × 43·3 mm. The average of a large number of specimens is 62·35 × 43·11 mm. The length varies from 56·5 to 67·2 mm. and the breadth from 46·5 to 40·5 mm.

In 1904 the first eggs were laid on December 3rd, or one day later than in the previous year (*Mossman*).

The numerous nests found were placed either on ledges of cliffs, or, though these were few, in hollows in the earth and among small stones on steep scree-slopes, and all were quite open. These are noteworthy facts, for the nests (containing young) found previous to the discoveries of the Scottish Expedition were obtained *in burrows and grottoes* on the Island of Kerguelen. There is little doubt that the Cape Petrel breeds at South Georgia, and Mr. Mossman tells me that he saw it in numbers off Deception I., one of the South Shetlands, in the height of the nesting-season.

This species is a summer visitor to the South Orkneys. In the autumn of 1903 it was only once seen after April 21st, on which date a flock was observed flying north. It was entirely absent during May, June, July, August, and September. The first of the spring immigrants was seen on October 1st, but the bird was not noted again until the 23rd, after which date it became frequent.

About 20,000 resort to Laurie I. for nesting-purposes, and they are found in hundreds all round the coast. In Uruguay Cove alone there were over one hundred accessible nests, and many others were out of reach. They also nest on Saddle I., where both young and old were obtained on February 4th, 1903, and are doubtless abundant throughout the other islands of the Archipelago, which may be regarded as a metropolis of the species.

They were never observed flying over the land, but were to be seen on the wing in front of the cliffs (not wheeling high over them, like *Pagodroma nivea*) or sailing over the sea.

The chick in down, five days old, taken on January 18th, 1904, is slate-grey above, and paler and sooty on the under surface.

A young bird obtained at Saddle I. on February 4th, 1903, has the head and body clad in down, with feathers developing on the wings and scapulars. The down on the upper surface is sooty (darker on the head and cheeks) and paler and greyish on the under parts. The wing-quills, the largest of which are 2 inches in length, are black, some of them with the inner webs white towards the base. The feathers of the scapulars are black and white. There are no signs of tail-feathers. Wing 8 inches.

The mature birds from the South Orkneys and the Weddell Sea present two types of plumage. The first of these, which perhaps represents old birds in weathered dress, were captured towards the end of summer (in February): and in them the dark portions of the plumage are blackish with a brown cast, the head alone being black; the feathers of the mantle have whitish bases; and the marginal and lesser coverts shew less white than in the next form. In the second type the dark portion of the plumage is slate-black, and the bases of the feathers of the mantle are dusky. Specimens in this phase were obtained early in the autumn (late in March), and are either in new or first plumage. A male captured on the nesting-ledges on December 3rd, 1903, is intermediate in plumage between these two forms.

PRION BANKSI Gould.

Prion banksi Cat. B. xxv. p. 434.

This "Whale-Bird" fairly claims a place in the avifauna of the South Orkneys on the strength of specimens seen off Coronation Island, within the territorial waters of the Archipelago, on November 27th, 1903, the day on which the 'Scotia' left her winter-quarters to proceed to the Falklands to refit.

It had been frequently observed on the outward voyage of the previous year, but fell off rapidly in numbers as the pack-ice was entered, and ceased to be noted some sixty miles ere the South Orkneys were reached. It was also seen, and specimens were obtained at sea, to the eastward of the group during the early days of the first voyage in the Weddell Sea.

The Wandering Albatros (*Diomedea exulans*) was frequently seen between the Falklands and the South Orkneys, but became gradually scarcer as the latter Archipelago was approached. There are only two records in the Log referring to the presence of an Albatros at the South Orkneys—namely, a young bird seen when off the islands on February 3rd, 1903, and one or more noted on the following day Saddle Island, but the species in both cases is uncertain

The Albatroses *Thalassogeron chlororhynchus* and *Phœbetria fuliginosa* were constantly seen on the voyage from the Falklands to within about sixty miles of the South Orkneys, between January 26th and February 1st, 1903. *Phœbetria cornicoides* approached still nearer, almost to Saddle I.

STERNA HIRUNDINACEA Less.

Sterna hirundinacea Cat. B. xxv. p. 52.

The White-rumped Tern was first observed by the Expedition at Saddle I. on February 4th, 1903. It was not found to be an abundant species at Laurie I., where only some two or three hundred spent the summer, nesting in small scattered colonies of about a dozen pairs, and also in isolated pairs.

In the spring of 1903 the first Terns of the season were observed on October 21st, but it was thought that some had been heard two or three days before. The bird had been absent from the island since the 25th of March of the previous autumn.

The nests were mere hollows, lined with a few small fragments of stone, on the tops of small rocks, or on raised beaches and small screes, and were always quite close to the shore. The nests in the colonies were placed fairly close together, and often in proximity to those of *Larus dominicanus.* When not surprised on their nests, these birds usually betrayed the whereabouts of their treasures by hovering over them and screeching loudly.

The eggs were one or two in number. The first were found on November 14th, and from that date onwards they were observed until January 15th. In 1904 Mr. Mossman records the first eggs observed on November 27th.

The earliest chicks were obtained on December 25th, and by February 7th young were noted as having lost all their down.

A few adult specimens and a chick are included in the collections; also a number of eggs, averaging 4·73 cm. × 3·34 cm.

This species is also a summer visitor to the South Shetlands. But according to Reichenow the South Georgian bird is a subspecies of *Sterna vittata*, which he has named *Sterna vittata georgiæ* (Orn. Monatsber. xii. p. 47); while the same authority has described (*l. c.*) the Tern of the Antarctic continent as a race of the Arctic Tern, *Sterna macrura antistropha.*

LARUS DOMINICANUS Licht.

Larus dominicanus Cat. B. xxv. p. 245.

This Black-backed Gull has a remarkably wide latitudinal distribution, ranging as it does from 10° S. in the South Atlantic to within a few degrees of the Antarctic Circle.

It was not a very abundant species at the South Orkneys, and the numbers visiting Laurie I. as a summer resort did not exceed some three hundred birds. It was also observed at Saddle I. in the late summer, and had apparently been breeding there.

The chief nesting-haunts on Laurie I. were at Point Davis on the south coast and Uruguay Cove on the north. At each of these places about a dozen nests were found. Elsewhere it was found less abundantly, mostly in isolated pairs, all round the coast.

The Southern Black-backed Gull was one of the few species that was observed all the year round, for some of them braved the severities of the winter, and were seen more or less frequently in the neighbourhood of the Expedition's winter-quarters at Scotia Bay.

The return of the spring immigrants commenced in mid-October. The birds were seen pairing on November 3rd, and the first eggs were laid on November 15th (on the 23rd in 1904 (*Mossman*)). The first young are mentioned under the date of December 26th, and are described as being then about a week old. Fresh eggs marked on December 3rd were found chipped on the 28th, indicating an incubation-period of about 25 days. Young still in down were observed as late as January 30th, 1904.

The nests were placed on raised beaches, small screes, and rocks within a few yards of the shore. The nest was a well-built structure of seaweeds, mosses, lichens, and feathers; and was usually surrounded by great quantities of limpet-shells, this mollusk being evidently a favourite food of the bird. The eggs were usually two in number, but sometimes three were found, and occasionally only one.

On April 15th Messrs. Bruce, Pirie, and Wilton saw an entirely white Gull, resembling in all other respects this species, of which it may have been an albino specimen; and on September 21st an almost white example of this Gull was seen, in which the wings and upper surface were much lighter than usual.

The collection contains skins of this species in various stages of plumage and a number of eggs.

Megalestris antarctica (Less.).

Megalestris antarctica Cat. B. xxv. p. 319.

About five hundred Antarctic Great Skuas spend the summer on Laurie I., taking up their quarters in the vicinity of the Penguin-rookeries, where they revel among the eggs and young of their neighbours. They were also observed nesting in similar situations on Saddle I.

During the southern autumn of 1903 they were seen daily until the 28th of April, on which date the last bird of the season was met with. They were entirely absent during the winter months, and the first spring immigrants were noted on October 16th. These were followed by a few others on the 26th, after which they gradually became abundant.

On November 22nd two Skuas, presumably males, were observed fighting fiercely, while a third was looking on, evidently an interested spectator. The birds fought with bills and claws for nearly an hour, when one of them became quite exhausted; and then the victor flew off with his bride, and the vanquished was ruthlessly torn to pieces and devoured by a Giant Petrel, which had been an interested spectator of the fight.

The first eggs were laid on December 2nd, and young birds a week old were found on January 29th. By February 11th, dark feathers were appearing on the wings and sides of the breast of these youngsters.

The period of incubation was not precisely ascertained, but was believed to be about six weeks.

In the spring of 1904 the Skuas returned on October 21st; and the first eggs were found on November 27th (*Mossman*).

The nests were usually placed on the tops of mossy rocks, or on plateaus from 100 to 400 feet above the sea, and consisted of well-made hollows in the moss, while teased-out fragments of moss formed the lining. Occasionally nests were found on the tops of moraines and were then hollows in the earth lined with lichens.

The eggs were two in number, and on these the bird sat very close, her mate usually remaining near at hand. When the nest was approached the owners screamed defiance, and if the eggs were wanted the sitting bird had to be forcibly ejected from the nest—not a very pleasant proceeding, as the sentinel bird wheeled above and dashed at the head of the intruder, though never actually striking him. When a dog, however, appeared upon the scene both birds swooped down on it, and sometimes struck it with their wings. The nests were surrounded by many shells of eggs and remains of young Penguins. The young—pretty little masses of light brown down—soon wander away from the nest, and are most difficult to detect among the moss, which they closely resemble.

These birds were to be seen incessantly hovering over the Penguin-rookeries, and swooping down ever and anon at the sitting birds to snatch their eggs or young. On such occasions the Penguins combined in screeching at the harpies, but to little purpose.

Many were about the house all the summer, being attracted by the remains of Penguins thrown out by the cook. Nearly one hundred were observed around a seal's carcase; while dead Giant Petrels, and even deceased members of their own species, did not seem to come amiss as food.

Numerous specimens were obtained at the South Orkneys. These vary in colour, though mature and obtained at identical periods. Specimens captured in November, soon after their arrival on the nesting-grounds, were of two types. One had the ground-colour of both upper and under surfaces dark, being of a deep blackish brown, rather paler below, and shewing comparatively few light markings on the mantle and scapulars, indeed in some specimens the back is practically uniform. The other type is less numerously represented in the collections, and is much paler (drab) generally, except on the head; while the feathers of the interscapulary region and under surface have grey-buff margins. In these light-coloured birds the yellow streaks on the neck are much more numerous and pronounced than in the darker birds; and they agree with the form described by Saunders (Brit. Mus. Cat. Birds, xxv. p. 320) as inhabiting the Falklands, except that they are not smaller in size than the ordinary dark form their wings measuring 16·65 inches, as against 16 to 17 inches in the last mentioned. The Falkland-Island bird has recently been described by Lönnberg (Wiss. Ergebn. d. Schwedischen Südpolar-Exp. Bd. v. Lfg. 5, p. 8, 1905) as a subspecies under the name of *M. antarctica falklandica*.

It is of interest to remark that one of these light birds was observed to be mated with one of the dark examples.

Megalestris maccormicki (Saund.).

Megalestris maccormicki Cat. B. xxv. p. 321.

Mr. Mossman informs me that a specimen of McCormick's Skua was procured by the Argentine naturalists at Laurie I. on November 11th, 1904, and is in their collection of birds. Mr. Mossman saw this bird in the flesh and examined it, and he tells me that it was quite different from the Skuas, light or dark, which bred at the South Orkneys. This South-Polar bird has not hitherto been obtained so far north as the South Orkneys, indeed I believe not outside the Antarctic Circle.

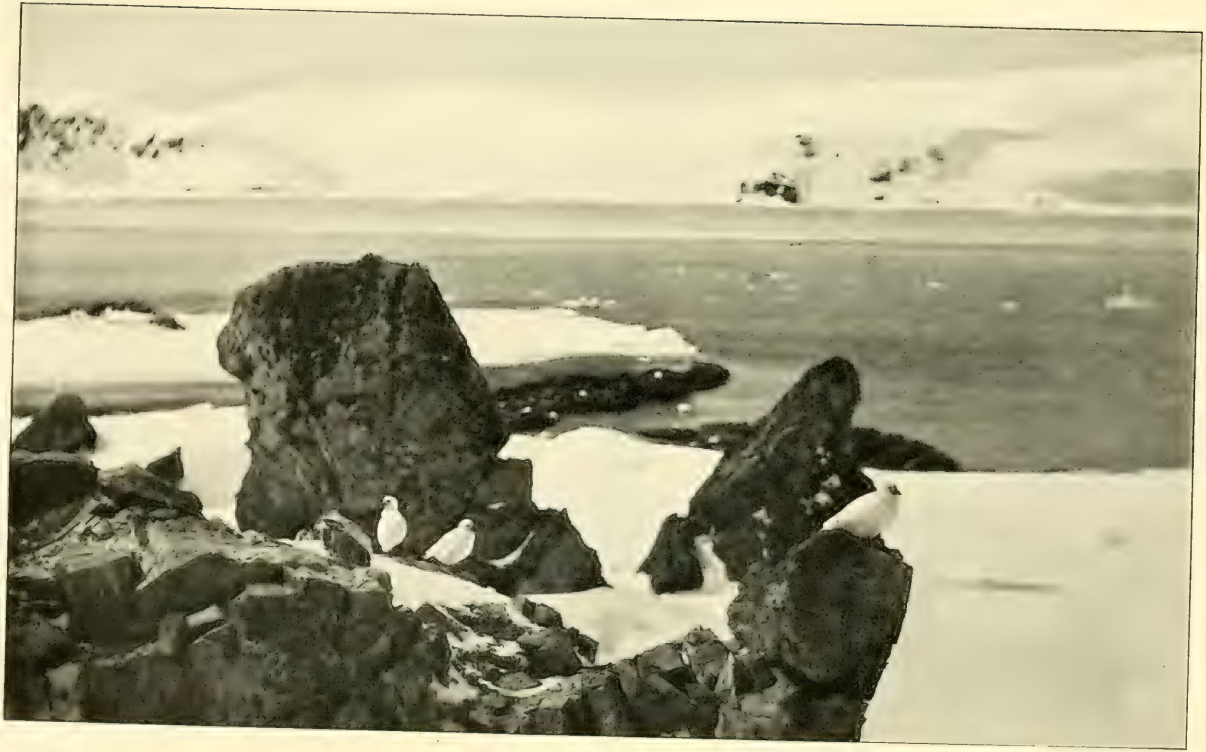
Chionis alba (Gm.). (Plates III. fig. 2, XII., & XIII. fig. 1.)

Chionis alba Cat. B. xxiv. p. 710.

This Sheathbill, the "Paddy" of the explorers, was an abundant species, and though chiefly a summer visitor to the islands, yet wintered in small numbers at Scotia Bay, being attracted by the refuse cast out from the ship. Some wintered away from the ship at the seal-haunts on the north side of the island.

In the summer it was present in all the Penguin and Shag rookeries, as many as two hundred haunting some of the larger colonies (see Plate XII.). Altogether it is believed that from 2000 to 3000 of these birds passed the Antarctic summer of 1903 on Laurie I. alone. Adults and young birds were present in considerable numbers at Saddle I. on the occasion of the Expedition's visit early in the previous autumn, namely on February 4th, 1903.

It was also fairly abundant around Scotia Bay in March, but towards the end of April, when the temperature approached zero, the numbers fell off considerably, and when



Bale & Danielsson, L^td

WHITE SHEATHBILLS on their nesting-ground (Mac Dougall Bay.)

winter-conditions became fairly established only some twenty or thirty remained, and for many days during that drear season were the only living creatures observed. These pensioners eked out an existence on the refuse odds and ends which were daily thrown out from the 'Scotia.' One of the birds became very tame, and for a number of days in succession visited the ship, remaining all day either in the fo'c'sle or in the galley.

Late in September and during the first half of October many returned to their summer-quarters, and their numbers greatly increased when the ice broke up on November 23rd.

The first eggs were found on December 11th, when eleven (two clutches of three, two of two, and a single egg) were taken, but some of these proved to be considerably incubated.

A nest found on December 3rd was on a ledge under an overhanging rock, and was composed of small stones and Penguins' tail-feathers. Five nests were found on the 11th in the large Penguin-rookery in Scotia Bay: four of these were on the fringe of the colony and quite low down, being only from ten to twenty feet above sea-level, and placed in crevices of rocks or underneath boulders on the moraine; while the other nest was under a large boulder about one hundred feet up the moraine, and right in the midst of the Penguins (see Plate XIII. fig. 1). These nests were mainly composed of the shells of Penguins' eggs, bones, and feathers, and a number of limpet-shells. The position of the nest is not difficult to detect, for one of the birds generally sits on a rock close by. The eggs are usually three in number.

Fresh eggs marked on December 11th hatched on January 7th, an incubation-period of twenty-eight days. The newly-hatched young are clad in brown down and shew conspicuous bare patches; they are not by any means pretty objects like the young Penguins and Skuas. On January 29th white feathers were beginning to develop under the down of these chicks; and by February 11th the down had nearly all disappeared.

These birds were found to be very tame and unwilling to fly; indeed, some of them would not take wing when pushed with a stick, and most allowed an approach to within striking distance ere they walked leisurely away.

In the Penguin-rookeries they were to be seen perched in prominent places, on the look-out for dead birds or broken eggs. They are very bold, and one was observed to abstract an egg from under a sitting Shag, which was somewhat disconcerted at having its photograph taken for the first time. Sheathbills were seen to revel in garbage of every description, including the excrement and placentæ of seals. Crustacea were found in the stomachs of some of those dissected.

The young bird figured (Plate III. fig. 2) is about one-third grown. The wings, scapulars, and flanks have white feathers with a little down. The head, sides and back of the neck, lower part of the back, and abdomen are clad in grey down mottled with brown.

The temperature of an adult bird, taken on March 26th, 1903, was found to be 107°·3 F.

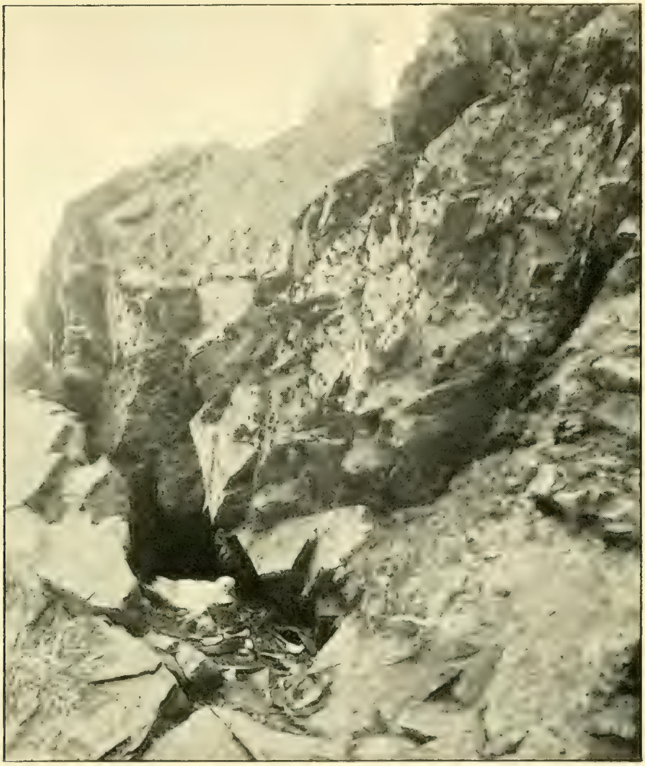
The collection contains a few skins of adults and the young bird described, also a small number of eggs. The latter are elongate-ovate in shape, and in colour white boldly blotched with greyish black or dark brown and liberally freckled with the same tints. They do not vary much in size, and measure from 54 to 58 mm. in length by 37 to 39 mm. in breadth.

PHALACROCORAX ATRICEPS King. (Plate XIII. fig. 2.)

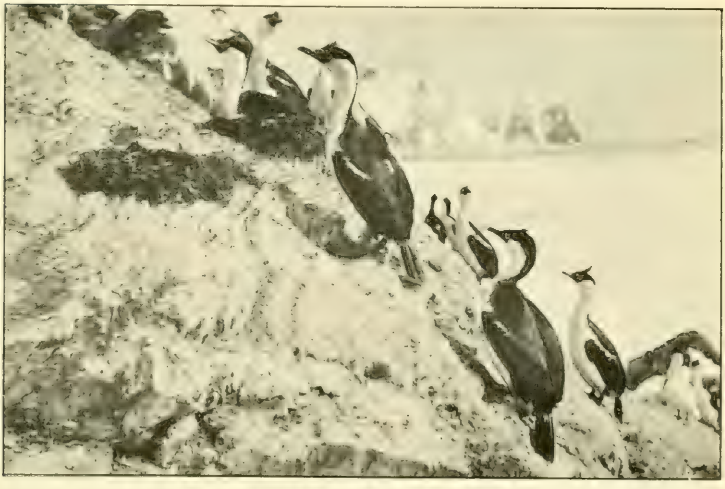
Phalacrocorax atriceps Cat. B. xxvi. p. 390.

It had long been known that a species of *Phalacrocorax* nested in the icy regions of the Antarctic, for Ross found a "Cormorant" breeding at Louis Philippe Land, and saw innumerable examples at Cockburn Island on January 6th, 1844. The specific identity of these Antarctic Shags remained somewhat uncertain until the Scottish expedition finally settled the matter at the South Orkneys in 1903.

The Blue-eyed Shag, as our explorers termed this species, was present all the year round in the Archipelago.



WHITE SHEATHBILL on its nest



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BLUE-EYED SHAGS and their nests (Rudmose Rocks)

In summer it was numerous, but avoided the main islands and sought nesting-places on small islets or rocks off the coast of Laurie and Saddle Islands, where it was estimated that about two thousand five hundred pairs were breeding, and where some of the rookeries contained as many as two hundred nests. In winter it was much less numerous, but the species never escaped observation for many days in succession.

On August 2nd a flock containing several thousands, probably early immigrants, was seen from the 'Scotia' as she lay in her winter-quarters.

The first eggs were obtained on November 8th, on a small islet some forty feet high situated off the north coast of Laurie Island, where a few Ringed Penguins were also nesting. The nests were well-built structures composed of seaweed, moss, lichens, and feathers. Some of the birds were still engaged in nest-building, and were diving and bringing up masses of seaweed in their bills, while others were busily engaged in picking mosses and lichens off the rocks. They were great thieves, even worse than the Penguins, for when the more timid of the nest-builders retreated on the approach of the explorers, the bolder birds immediately carried off the momentarily deserted materials for their own use. A few only of the nests contained eggs, mostly one apiece, though some had two; and the conclusion was arrived at that the birds had only just commenced laying. Many of the nests were on rocks, some of them in the sites of previous years; while others were on pinnacles of ice, having been built on snow which had gradually thawed away all round the nest, but not at its base. The sitting birds were very confiding, and allowed themselves to be stroked on their nests. On the following day, November 9th, another nesting-colony was found on a small bare islet. Here many of the nests contained three eggs, and the rock between them was in a terribly unsavoury condition. The usual number of eggs was two, but three were not unfrequent. The eggs varied in size from 51 to 67 mm. in length, and were 41 mm. in breadth.

It was unfortunately impossible to visit these rookeries later in the season; and there were none within reach of Scotia Bay, though some birds rested every night on the rocky islets in the bay in December, where no signs of their nesting were apparent.

There are a number of skins in the collection in both adult and immature plumage and a considerable number of eggs.

Adult males shot in September have the crest well developed, the feathers being from 1·5 to 1·75 inches long. A male shot in December has a much shorter crest, and others of the same sex obtained in February are devoid of these ornamental plumes. The September specimens are much more brilliant in plumage than the rest of the adults, and also have the nasal caruncles more developed. The white dorsal patch varies much in size, even in adult males obtained at the same season; and in one captured in December it is represented by a narrow band of white blotched with black across the middle of the back. The culmen of adult males varies from 2·2 to 2·5 inches and the wing from 11·8 to 12·1 inches. Weight 6·5 lbs.

The bird in first plumage has not, I think, been described. One obtained in December has the upper surface hair-brown, tinged with green on the back, where the feathers have narrow margins of a lighter brown; the head and hind-neck shew a few darker feathers; outer scapulars and tail whitish, the shafts of the latter dull light green; primaries and secondaries dusky with a faint greenish tinge; wing-coverts edged with dull white, with a narrow buff-white alar band below the marginals; under wing-coverts brown; under surface white; thighs brown. These young birds shew no signs of a white dorsal patch. Slightly older birds obtained in February have their upper plumage a mixture of brown and metallic feathers, and one specimen shews slight indications of a white dorsal patch; the central tail-feathers are blackish with white shafts, and the rest of the plumage is as in the younger bird.

DESCRIPTION OF THE PLATES (III.–XIII.).

Plate	
III.	Young of *Pagodroma nivea* (p. 170) and *Chionis alba* (p. 182).
IV.	Young of *Pygoscelis antarctica* (p. 152).
V.	Sketch-map of the South Orkney Islands (p. 145).
VI.	Ringed Penguins courting (Brown's Bay) (p. 152).
VII.	Ringed Penguins nest-building (Brown's Bay) (p. 152).
VIII.	fig. 1. Adélie Penguins' Rookery on Graptolite Island (p. 157). fig. 2. Adélie Penguin feeding its young (p. 157).
IX.	fig. 1. Departure of Gentoo Penguins (Scotia Bay, April 1903) (p. 162). fig. 2. Gentoo Penguins and their nests (Scotia Bay) (p. 162).
X.	fig. 1. Cape Petrel with its egg (p. 174). fig. 2. Wilson's Petrel on its nest (p. 166).
XI.	fig. 1. Snowy Petrel by its nest (p. 170). fig. 2. Giant Petrel, white form, nest and egg (Cape Geddes) (p. 172).
XII.	White Sheathbills on their nesting-ground (MacDougall Bay) (p. 182).
XIII.	fig. 1. White Sheathbill on its nest (p. 182). fig. 2. Blue-eyed Shags and their nests, Rudnose Rocks (p. 184).

XI.—*Notices of recent Ornithological Publications.*

1. *Allen on Birds from Santa Marta, Colombia.*

[Supplementary Notes on Birds collected in the Santa Marta District, Colombia, by Herbert A. Smith, with Descriptions of Nests and Eggs. By J. A. Allen. Bull. A. M. Nat. Hist. vol. xxi. pp. 275–295 (1905).]

In 1900 Dr. Allen published in the 'Bulletin of the American Museum of Natural History' (xiii. p. 115; see 'Ibis,' 1901, p. 319) a list of the birds collected by Mr. Herbert Smith in the Santa Marta district of Colombia. A more recent shipment received from the same district, also made by Mr. Smith, contained about 350 bird-skins and a large collection of nests and eggs. With these the total number of species now recorded from Santa Marta is 392. The present paper contains additions and corrections to the former list, and descriptions of the nests and eggs forwarded by Mr. Smith, as already mentioned. Only those identified in a "fairly positive" manner are dealt with.

Some of them are of considerable interest—such as *Bucco*, *Galbula*, *Manacus*, and *Chiroxiphia*.

2. *Allen on the Birds of N.E. Siberia.*

[Report on the Birds collected in North-Eastern Siberia by the Jesup North Pacific Expedition, with Field-notes by the Collectors. By J. A. Allen. Bull. A. M. Nat. Hist. xxi. p. 219 (1905).]

The extreme north-eastern point of Asia is a most interesting country to the Palæarctic ornithologist, and we cannot be too grateful to Mr. Allen for giving us an account of the 800 skins, besides nests and eggs, which were collected on that coast by Mr. Buxton and his assistants during the "Jesup" North Pacific Expedition of 1900–01. They are referred to 125 species, while two others are added from Mr. Buxton's notes. Two of the species, *Alauda buxtoni* and *Anthus anadyrensis*, are characterised as new to science. The species are mostly in the British List, and, though the birds of Kamtschatka have been well catalogued by Guillemard and Stejneger, additional information as to their occurrence in this remote district is always acceptable.

Dr. Allen commences his list at the lower end and uses the most newly-discovered names of the American Check-list. But, for the sake of his less-advanced brethren on this side of the Atlantic, he might have explained to us the meaning of such names as *Gavia lumme* and *Totanus ater*, under which some of our familiar birds lie hidden.

3. '*Annals of Scottish Natural History.*'

[The Annals of Scottish Natural History. Nos. 55 & 56, July and October 1905.]

The first of these numbers contains some interesting Zoological Notes out of the log-book of the Ben Nevis Observatory, from 1872 down to the deplorable close of that institution on October 1st, 1904. The species of birds recorded from the summit of the highest mountain in the British Islands could hardly be many; the most abundant being the

Snow-Bunting, which is resident throughout the year and breeds near the top. The Notes on the Birds of St. Kilda, compiled by the Rev. J. B. Mackenzie from his father's memoranda, are continued and concluded. Of the Gannet, we learn that "it is here called 'suileire,' the sharp-eyed," so that now the origin of the so-called "Scandinavian" and Latinised *Sula* appears obvious—and Gaelic*. The descriptions of the habits of the sea-birds, as well as of the mode of collecting the harvest of the cliffs, are excellent; while a smile may be raised at the respective merits of Guillemots' eggs, on their progress from freshness (through incubation) to the unhatched and late-in-the-season stage, when some, on being cooked, "look like a piece of sponge-cake, have a high gamey flavour, and are esteemed a great delicacy." The rendering into English of some of the Gaelic names is very descriptive, and we do not remember to have seen them explained before. Thus the Manx Shearwater is often called "cromag," or crescent-shaped, from the appearance of the wings during flight; and the Puffin is "buigire"= the damp-fellow, because he reaches the island a few days earlier if the weather should be damper than usual. In this case only the explanation is new, the Gaelic name being widely spread, even to the north of Ireland. The latest news from St. Kilda is contributed by Mr. James Waterston, who was there from June 11th to July 10th, 1905, and records, among other details, two examples of the Great Shearwater (*Puffinus gravis*), picked up in a decomposed condition (pp. 201–2). A bird of this species was also found dead at Lendalfoot, Ayrshire, on October 3rd, 1904, as mentioned by Mr. John Paterson in his admirable Report on Scottish Ornithology for 1904 (pp. 203–15). The erratic occurrences at the Flannan Islands of the Black Redstart, Sedge-Warbler, and

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* Messrs. Harvie-Brown and Buckley ('Fauna of the Outer Hebrides,' p. 94, 1888) give "*Sulaire*=the eyed or the eyer," but that rendering is less "happy" and convincing than Dr. Mackenzie's. Five years later in the 'Dictionary of Birds,' pt. i. (published in 1893), Professor Newton writes (p. 300, footnote 1): "Solan is no doubt from the Scandinavian *Sula*, whatever that may mean."—H. S.

Spotted Flycatcher, all in *June*, are recorded by Mr. W. Eagle Clarke. Other interesting facts are to be found among the Zoological Notes.—H. S.

4. *'The Auk.'*

[The Auk. A Quarterly Journal of Ornithology. Vol. xxii. Nos. 3 & 4, July and October 1905.]

The first paper is by the Rev. C. W. G. Eifrig, on the Ornithological results of the Canadian 'Neptune' Expedition to Hudson Bay, and northward as far as lat. 78° 40′, on the coast of Greenland. Winter-quarters were in the north-western corner of Hudson Bay, and the expedition was absent a year and fifty-one days. Some of the results were surprising: for instance, the Great Black-backed Gull was found to be common and breeding on North Devon Island, about 75° N., a vast extension of its range as previously known. Sabine's Gull and the Lesser Snow-Goose were rather common and nested on Southampton Land and other islands; while interesting details are given respecting many other Arctic species. Mr. Ruthven Deane sends another instalment of letters written to Audubon by William Swainson, between 1828–30, a period when the latter "was deeply engaged in his literary pursuits, yet in a discontented and nervous frame of mind, mortified at the slow sale of his 'Zoological Illustrations,' his temporary embarrassment for funds, and his evident growing dislike for American naturalists." Mr. Austin W. Clark has a contribution on Extirpated West-Indian Birds, followed by two papers on the Macaws of the Lesser and the Greater Antilles, and one on the West-Indian Parrots (p. 337). Mr. John E. Thayer gives illustrations of the stuffed Great Auk formerly in the collection of Lord Hill, and of two eggs out of three, recently purchased from Mr. Rowland Ward. Mr. B. S. Bowdish's Ornithology of a Churchyard (St. Paul's, New York City) shews a surprising list of species afforded by the close investigation of a restricted and unpromising area. Mr. J. H. Riley gives a list of 71 species of birds obtained or observed in the Bahamas during June and July 1903.

We have not enumerated other papers which have reference solely to the United States; but Mr. R. Deane's list of the Ruffs obtained in North America (p. 410) will interest European ornithologists. It is with much regret that we read (p. 443) of the deliberate murder of Mr. Guy M. Bradley, in Monro County, Florida, while engaged, as Game-warden, in protecting birds from the plume-hunters.—H. S.

5. '*Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. iii. Nos. 10–12, Vol. iv. No. 1. London: August to November 1905.]

The most important paper in these four numbers of the 'Avicultural Magazine' is that by Mr. D. Seth-Smith on the breeding in captivity of *Turnix varia* (2 illustrations), which forms a welcome supplement to his similar article on *T. tanki* in July 1903. Special emphasis is laid on the female's method of courting and her booming note, and on the incubation and rearing of the young by the male. It seems likely that *T. varia* is polyandrous, which would imply that the custom is usual in the genus. The same author has been successful in breeding *Synœcus australis*, while Sir W. Ingram has had equally good results with *Pternistes leucoscephus* (4 illustrations), and other writers record their experiences with the Psittaci—a favourite group—with some of the Fringillidæ, the Red-backed Shrike, and hybrid Ousels. Several members give us their experiences connected with birds on journeys at home and abroad, while minor articles and notes too numerous to mention swell the sum total. A curious instance is quoted (p. 331) of the Lapland Bunting breeding six feet from the ground; and a correction should be noted, namely, that the figure of *Ammoperdix heyi* in the July number really represents *A. cholmleyi*. The coloured plates which accompany the accounts of three species are of *Cyanops franklini*, *Pionopsittacus pileatus*, and *Trichoglossus nigrigularis*. No. 12 contains the annual report of the Council.

6. *Dresser's 'Eggs of the Birds of Europe.'*

[Eggs of the Birds of Europe, including all the Species inhabiting the Palæarctic Area. By H. E. Dresser. London, 1905. 4to. Pt. I. pp. 1–32, 5 pls.]

When Messrs. Dresser and Sharpe issued the first part of the 'Birds of Europe' in 1871, it was at once recognised that a monumental work was in course of preparation, and the result did not falsify the anticipation. We now have the pleasure of announcing to our readers the publication, under the title cited above, of the first part of Mr. Dresser's long contemplated sequel to the former book. It is calculated that some twenty parts, each containing from twenty to thirty species and five plates, will suffice to give a proper idea of the extremes of variation in the eggs, a large proportion of which will be figured from the rich collection of the author, though he will take advantage of every possible opportunity of including those of which he does not himself possess specimens. In many cases nests are also figured.

Besides the plates, which are as good examples as we have seen of the "three-colour process," a page or more of letterpress is usually devoted to each species, wherein are given the local names, the ranges, the habits, the notes, the times of incubation, and descriptions of the nests, with references to figures in other publications. The eggs of *Sylvia affinis* are believed to be now figured for the first time.

The author has followed his usual custom of admitting but few subspecies, so that the eggs must be taken to represent what field-botanists call the "aggregate" as opposed to the "segregate," and any differences that may exist between those of the various geographical races is disregarded. It is difficult to see how this could have been avoided in so comprehensive a work; but it would be advantageous to workers in Ornithology if Mr. Dresser would call attention to such geographical races as are generally admitted, and state their respective ranges so far as they are known. This is not a question of the advantages of trinomial or binomial nomenclature, but of the recognition of variability in a species, and we hope that the author may see his way to give a list of the races in subsequent parts. In other respects Mr. Dresser appears to have carried out his difficult task admirably, though we may suggest that Montagu's Harrier and the Hen Harrier by no means always fly low, and that they are often distinctly vociferous at the nest.

The eggs figured in this Part are those of *Elanus cæruleus, Circus æruginosus, C. cineraceus, C. swainsoni, C. cyaneus, Buteo vulgaris, B. zimmermannæ, B. ferox, Archibuteo lagopus, Pernis apivorus,* 13 species of *Sylvia,* and 2 species of *Melizophilus.*

7. *'The Emu.'*

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Official Organ of the Australasian Ornithologists' Union. Vol. v. pt. 2 (Oct. 1905) and Supplement. Melbourne, 1905.]

'The Emu' for October, 1905, contains an important article on one of the Lyre-birds (*Menura victoriæ*) by Mr. A. E. Kitson. The habits are fully described, the nest and eggs are figured, and the bird's capacity for mimicry is noted, an important fact (apparently unknown hitherto) being that the female is almost as clever a mimic as the male. Mr. F. L. Berney continues his "Field-Notes on Birds of the Richmond District, North Queensland," while various other articles and notes complete the Part.

A supplement contains "A Dichotomous Key to the Birds of Australia," by Mr. A. G. Campbell, who hopes that it will be found useful by all ornithologists, and particularly those interested in field-work. It is in effect a key to the species (which are not described in detail), and the genera only come in as an aid to determining the species.

8. *Finsch on the Birds of Borneo.*

[Dr. A. W. Nieuwenhuis' Forschungsreisen in Niederländisch Borneo. Ornithologische Ergebnisse hauptsächlich von oberen Mahakam und Kajan. Bearbeitet von Dr. O. Finsch. Notes Leyd. Mus. xxvi. nos. 1 & 2. Leyden, 1905.]

After an excellent *résumé* of previous authorities on the birds of Borneo, Dr. Finsch gives an account of the large collections of birds made in the Dutch portion of that great island by Dr. A. W. Nieuwenhuis from 1896 to 1900, and sent to the Leyden Museum. They are referred to 209 species, on each of which short notes are given. The only actually new species in the series obtained by Dr. Nieuwenhuis was a Short-legged Ant-Thrush, *Poliolophus nieuwenhuisi*, which has been previously described, and is now figured, but there are other rarities in the list. We observe that 12 examples of *Phylloscopus borealis* were obtained on the Upper Mahakam River during the winter months, shewing one of the localities where this little bird, which breeds in the far north, passes its winter. A fine series of the splendid Pheasant *Lobiophasis bulweri* was also procured on the Upper Mahakam River, and an adult male of *Dissura sturmi* (see 'Ibis,' 1904, p. 674) on the Upper Kapuas.

9. *Hartert's 'Miscellanea Ornithologica.'*

[Miscellanea Ornithologica. Critical, Nomenclatorial, and other Notes mostly on Palæarctic Birds and their Allies. By Ernst Hartert, Ph.D. Part II. Nov. Zool. xii. pp. 497–503.]

We have already noticed the first part of Dr. Hartert's 'Miscellanea Ornithologica' (see 'Ibis,' 1905, p. 123). The author begins the second part by a discussion of the various races of *Parus major*, of which 18 are enumerated. Of these *P. m. mahrattarum* (from the Indian peninsula and Ceylon) and *P. m. hainanus* (from Hainan) are described as new subspecies. Our English bird is called "*Parus major newtoni*," but we fear that the ornithologist after whom it is named will hardly appreciate the compliment. Remarks on some of the Larks (*Lullula, Alauda, Eremophila, Ammomanes*, and *Galerida*) follow. These are mainly supplementary to the accounts of these genera given in the third part of the 'Birds of the Palæarctic Fauna.'

10. *Hartert's 'Birds of the Palæarctic Fauna.'*

[Die Vögel der paläarktischen Fauna. Von Dr. E. Hartert. Heft iii.* Berlin: Friedländer, 1905.]

Continuing the same plan as in the previous parts,

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* For notice of Heft ii., see 'Ibis,' 1904, p. 644.

Dr. Hartert finishes the difficult Family Alaudidæ, which he commenced in part ii., and discusses the genera *Lullula*, *Alauda*, *Alæmon*, *Chersophilus*, and *Eremophila*. Thirteen subspecies of *Alauda arvensis* are recognised and fifteen (*Palæarctic*) forms of *Eremophila*. We regret that it has been thought necessary to resuscitate this name for the Shore-larks, which of late years have been usually called *Otocorys* (a very good name, when correctly spelled!). Nor, in our opinion, is it advisable to degrade such distinct forms as *Otocorys penicillata* and *O. bilopha* to the rank of subspecies. They are distinguishable *primo visu*, and it seems to be quite illogical to place them on the same level as other scarcely recognisable forms such as make up the bulk of the new subspecies.

The Motacillidæ, consisting of the Pipits and Wagtails, follow the Larks. Among them we find *Anthus leucophrys captus* (from Palestine), *A. berthelotii madeirensis* (from Madeira and Porto Santo), *A. spinoletta kleinschmitti* (from the Faroe Isl.), and *Motacilla flava simillima* (from Kamtschatka) described as new subspecies, besides which many little-known names are resuscitated as subspecies. Altogether 30 subspecific forms of Wagtails are recognised under 4 specific heads—*M. flava* (13), *M. citreola* (2), *M. boarula* (3), and *M. alba* (12).

The Neogean Mniotiltidæ are represented in the Palæarctic Fauna by three stragglers only, and, although mentioned, are rightly excluded by Dr. Hartert from his List. The Nectariniidæ, which follow next, are a palæotropical group, but three species occur within palæarctic limits — *Nectarinia brevirostris* in Eastern Persia, *N. osea* in Palestine, and *N. metallica* on the Nile as far north as the First Cataract. They are therefore rightly included in the present work. The allied Family Zosteropidæ, consisting of about 150 species, is also essentially Palæotropical, but three species of *Zosterops* occur in the Japanese Islands, and a fourth (*Z. erythropleurus*) ranges far north in China and up to the Amoor.

The Creepers, Nuthatches, and Tits, which occupy the remaining pages of the present number of Dr. Hartert's work, are perhaps three of the most difficult Passerine groups in the whole Palæarctic Ornis, and must have cost the energetic author much time and trouble, although they have been lately well monographed by Mr. Hellmayr*. Of Certhiidæ Dr. Hartert enumerates 19 palæarctic species and subspecies; of *Tichodroma,* the second palæarctic genus of this Family, happily only one, although several attempts have been made to separate the local forms. Of *Certhia* 4 new subspecies are described and designated *C. familiaris corsa* (Corsica), *C. f. bianchii* (Kansu), *C. f. tianschanica* (Tianshan), and *C. brachydactyla ultramontana* (S. Europe). Thus while Mr. Dresser allows only 2 Palæarctic species of *Certhia* Dr. Hartert gives us 19 separable forms. This is indeed a revolution!

Of the Nuthatches only one genus (*Sitta*) occurs within the Palæarctic area, but the local forms, as we all know, are numerous: Dr. Hartert makes 24 of them—7 species and 17 subspecies. *Sitta europæa* is divided into 13 subspecies, among which our familiar bird figures as *Sitta europæa britannica*. *S. e. levantina* is a new subspecies from Asia Minor and Palestine. What has always been taken for a very distinct species—*Sitta whiteheadi* of Corsica—is now degraded into a subspecies of *Sitta canadensis*. This is quite a new view to us, but Dr. Hartert has, no doubt, carefully considered the question. It is most remarkable that two birds from such widely separated localities should be so nearly related.

The Paridæ, which come next, are not quite finished in this Part of the work, so we will defer our remarks upon them until the publication of Part IV.

11. *Hartert on* Fringilla teydea.

[Eine neue Subspecies von *Fringilla teydea*. Von Dr. Ernst Hartert. Orn. Monatsb. 1905, p. 164.]

Herr Hauptman Polatzek has lately discovered *Fringilla teydea* (hitherto believed to be confined to Teneriffe) in the mountain-woods of Grand Canary. The examples transmitted to Tring shew that the form of Grand Canary is slightly different, and Dr. Hartert proposes to call it *F. t. polatzeki.*

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* Das Tierreich, 18 Lief., 1903 See 'Ibis,' 1904, p. 153.

12. *Harvie-Brown's Travels in Northern Europe.*

[Travels of a Naturalist in Northern Europe. Norway, 1871, Archangel, 1872, Petchora, 1875. By J. A. Harvie-Brown. 2 vols. 8vo. London, 1905. Pp. i–xiv, 1–260, i–viii, 261–541. 2 col. pls. and 23 illustr., 4 maps, 9 appendices.]

Mr. Harvie-Brown's ornithological experiences are well-known to the members of our Union, and the papers on the results of his expeditions were an important feature in former volumes of our Journal ('Ibis,' 1873, p. 54; 1876, p. 105); but he strikes a new note when he gives us in the present book the actual substance of his Journals in almost the original phraseology. The journalistic form has, of course, its disadvantages, but these are compensated by the fact that we lose nothing of the pristine freshness of the writer's impressions taken down while he was actually in touch with the inhabitants—human and otherwise—of the districts which he visited. Only of the third journey, moreover, has a full account been hitherto published.

In 1871 Mr. Harvie-Brown, in company with the late E. R. Alston, travelled northward from Christiania through a considerable part of Norway, which was not so well known at that date as it is now; and this tour was followed in 1872 by a second to the Archangel district and the delta of the Dwina with the same companion.

The chief object in view was the observation of certain of the rarer British birds in their breeding-quarters, and a partial success was attained, but an irresistible impulse drew the author onward to still more Eastern countries, though the project unfortunately failed for the time being through the premature breaking up of the "winter-roads." But in 1875, Mr. Harvie-Brown, choosing the late Henry Seebohm as his fellow-traveller, started across Northern Russia to the Petchora River. It is needless to recapitulate the disappointments and successes of the memorable journey from Ust-Zylma to the Samoyede tundras and the delta of the Petchora, for the pages themselves will recall to the reader the discovery of the eggs of the Grey Plover, the Little Stint, Bewick's Swan, the Petchora Pipit, and the Yellow-headed Wagtail (an extension in range of 1000 miles northwards), the occurrence of the Curlew-Sandpiper in nuptial plumage, of *Anthus gustavi, Phylloscopus tristis,* and *Pratincola maura* in their breeding-stations, the migratory movements of various species past Ust-Zylma, and many other interesting details; but we are sure that the account of the explorer's wanderings will be read with pleasure by many, and that the coloured plates of the eggs of the Grey Plover and Little Stint—along with those of the Golden Plover and Temminck's Stint for comparison—will be duly appreciated among the many illustrations. It may be mentioned that Mr. Harvie-Brown was subsequently in communication with Captain Wiggins, who was about to sail for the mouth of the Yenesai, but was unfortunately prevented from accompanying him. He passed on the Captain's offer to Seebohm, who was thus enabled to supplement the discoveries in the Petchora valley.

To one important misprint we may call the author's attention—the rhodendron-like plant found on the tundra should be "*Ledum*" and not "*Sedum*" *palustre.*

13. *Hellmayr on some Birds from Pará, Brazil.*

[Notes on a Collection of Birds made by Mons. A. Robert in the District of Pará, Brazil. By C. E. Hellmayr. Nov. Zool. xii. no. 2, pp. 269–305.]

After some preliminary remarks on the principal authorities on the birds of Pará and its vicinity (Natterer, Wallace, and Layard), the author gives us a systematic account of a collection made by M. Robert at Igarapé-Assa—a place on the railway between Pará and Braganca. It numbers 200 specimens referable to 89 species, of which two (*Hypocnemis vidua* and *Conopophaga roberti*) are new, besides an overlooked form of *Deroptyus accipitrinus* which is named *D. a. fuscifrons.* Moreover, there are ten species represented in the collection which have not been previously recorded from Pará, and examples of such rarities as *Pipra opalizans* and *Calospiza albertinæ*. The new names *Dendrocolaptes certhia ridgwayi*, *Cercomacra sclateri*, and *C. brasiliana* are proposed instead of others which Mr. Hellmayr considers to have been incorrectly applied to these forms.

14. *Hellmayr on Two new Peruvian Birds.*

[Descriptions of Two new Birds discovered by Mr. O. T. Baron in Northern Peru. By C. E. Hellmayr. Nov. Zool. xii. no. 2, pp. 503–4.]

Two new birds, specimens of which were sent to the Tring Museum from Northern Peru by Mr. Baron, are described as *Thripophaga berlepschi* and *Diglossa pectoralis unicincta*.

15. *Legge on the Australasian Ornis.*

[The Zoogeographical Relations of the Ornis of the various Subregions of the "Australian Region," with the Geographical Distribution of the principal Genera therein. Presidential Address. By Col. Legge, R.A., F.Z.S., M.B.O.U.]

We have been favoured with a copy of the address given by our old friend Col. Legge, at Dunedin in New Zealand, on taking the Chair at the meeting of the Australasian Association for the Advancement of Science in January 1904. Col. Legge naturally selected ornithology as his branch of Biological Science, and the Australasian Avifauna as the special subject of his oration. On the bird-life of the four great Subregions of Australasia he discourses at full length, and points out their principal characteristic forms. He then takes up the subject in systematic order, and shews how the different Families and Genera are represented in the different parts of the area of which he treats. The conclusions arrived at are:—

(1) Australia and Austro-Malaya are the most closely allied Subregions.

(2) The relations between Australia and Polynesia are mainly through the Meliphagidæ, Muscicapidæ, and Laniidæ.

(3) Between Austro-Malaya and Polynesia we find affinity through the Meliphagidæ, Muscicapidæ, Loriidæ, Peristeridæ, and Treronidæ.

(4) Between Polynesia and New Zealand through the

genera *Rhipidura, Cyanorhamphus, Urodynamis,* and *Notophoyx.*

(5) Between New Zealand and Australia through the genera *Rhipidura, Pseudogerygone,* and *Zosterops.*

The name "Papuan" is perhaps a better designation for the Austro-Malayan Subregion of Wallace, and New Zealand and its adjacent islands may be appropriately called the "Maorian Subregion," as suggested by Sclater in 1891.

16. *McGregor on Philippine Birds.*

[(1) Birds from the Islands of Romblon, Sibuyan, and Cresta de Gallo. Bureau of Gov. Lab. no. 25. Manila, 1905.

(2) Further Notes on Birds from Ticao, Cuyo, Culion, Calayan, Lubang, and Luzon. *Ibid.*]

The American naturalists continue their successful investigations of the Ornithology of the Philippines (*cf.* 'Ibis,' 1904, p. 642). In the first of these articles Mr. McGregor gives an account of his researches in the little-known Romblon group, which he visited in May 1904, with the result of adding 25 species to the list of its birds, those previously known from Prof. Worcester's exploration having amounted to 88. Of the 25 accessions two are described as new under the names of *Otis romblonis* and *Loriculus bournsi,* the latter having been previously united to *L. regulus.* Good field-notes and other remarks are given, and the large nesting-mound of *Megapodius cumingi* is described and figured. The nesting-habits of *Salangana* (intell. *Collocalia*) *marginata* are also described and the eggs figured.

In the second paper additional notes are given on some of the birds mentioned in previous articles. *Tachornis pallidior* from Luzon and *Æthopyga rubrinota* from Lubang are described as new, and very interesting details are given as to the nesting-habits of the Panini Hornbill (*Penelopides panini*) and of two species of small Swifts, *Salangana* (i. e., *Collocalia*) *linchi* and *S. whiteheadi.* The nesting-hole of the Hornbill, shewing the "cakes" by which the female is barred in, is figured, and a full account of this very singular habit is given.

17. *Newton's 'Ootheca Wolleyana.'*

[Ootheca Wolleyana: an Illustrated Catalogue of the Collection of Birds' Eggs formed by the late John Wolley, Jun., M.A., F.Z.S. Edited from the Original Notes by Alfred Newton. Part III. Columbæ—Alcæ. London: R. H. Porter, 1905. Price £2 2*s.* net.]

We were much pleased in 1902 to receive the second part of the 'Ootheca,' completing the first volume, after a long delay. We have now the pleasure of welcoming the third part of this attractive work, which carries the subject forward from the Columbæ to the Alcæ inclusive. We suppose that a fourth part will complete the second volume and bring the whole work to a conclusion, and we trust that the issue of the final portion may soon take place.

In our notice ('Ibis,' 1903, p. 126) of the second part of the 'Ootheca' we explained the general plan of work, and need not now repeat it.

The present part, which commences with the Pigeons, contains descriptions of 2791 sets or clutches of eggs and gives particulars of each of them as regards exact locality, date, and authority, so far as information on these points is available. Field-notes and other particulars are added when the subjects are of special interest. Many of these are selected from Wolley's journals and memoranda, and are well worthy of careful study, as shewing the enthusiasm of the great Oologist, and the extreme care that he exercised in the authentication of his specimens.

Part III. of the 'Ootheca' is accompanied by eight coloured plates, all of them representing eggs of the Gare-fowl, or Great Auk (*Alca impennis*), to which bird Prof. Newton, as is well known, has devoted special attention for many years. The first seven plates represent the seven eggs now in the Wolley Collection; the last is taken from a drawing by John Hancock of a specimen formerly in the cabinet of the late Mr. John Scales, which was afterwards destroyed in a fire. Full particulars are given by Prof. Newton of all that is known of the history of these wonderful and valuable eggs.

18. *North on some Australian Honey-eaters.*

[(1) On an Insular Form of *Melithreptus brevirostris.* By A. J. North. Rec. Austral. Mus. vol. vi. pt. 1.

(2) Notes on the Varied Honey-eater. By A. J. North. *Ibid.*]

Mr. North's recent studies of the Australian Meliphagidæ have led him to separate the form of *Melithreptus brevirostris* from Kangaroo Islands, South Australia, as *M. magnirostris.* In the second paper the nest and eggs of *Ptilotis versicolor* from one of the Frankland Islands, off the coast of N.E. Queensland, are described and figured.

19. *Oberholser on Birds from Kilimanjaro.*

[Birds collected by Dr. W. L. Abbott in the Kilimanjaro Region, East Africa. By Harry C. Oberholser. Pr. U.S. Nat. Mus. xxviii. pp. 823–936.]

The excellent series of birds sent to the U.S. National Museum by the energetic traveller and collector Dr. Abbott from the district round Kilimanjaro, in 1888 and 1889, has, for reasons which are not very clearly explained, remained undescribed (with the exception of a few novelties) up to the present time. Mr. Oberholser now gives us a complete account of it. It consists of 684 specimens, which "represent 256 species and subspecies belonging to 59 families." It will be, of course, understood that there is much difficulty in the determination of African birds in America, where there is no such large series of named specimens for comparison as are to be found at London and Berlin. A good idea of the richness of Dr. Abbott's collection is furnished by the list of 62 species and subspecies that were unnamed when his specimens were first received, but have since been described from other collections made in British East Africa. Nevertheless there remain in Dr. Abbott's series examples of a certain number of supposed new forms which are characterised in the present memoir under the following names:—*Astur sparsim-fasciatus aceletus, Lissotis notophila, Œna capensis anonyma, Chalcopelia chalcospila acanthina, Asio maculosus amerimnus, Melignothes exilis meliphilus, Pycnonotus layardi micrus, Apalis thescela,* and *Platysteira cryptoleuca.* Besides these, a new name "*Acrocephalus orinus*" is proposed for "*A. macrorhynchus* (Hume)," because there is said to be a *Calamoherpe macrorhyncha* of v. Müller (Beitr. Orn. Afr. 1853), which is, however, a mere synonym of *A. stentoreus*. Moreover, Hume's species was based on a single specimen, and, as no other examples of it have yet been obtained (*cf.* Oates, 'Birds of Brit. India,' i. p. 361), Mr. Oberholser might well have refrained from giving a new name to a very doubtful bird which he has never seen!

In new genera our author is quite as prolific as in new subspecies. No less than 10 are proposed:—*Tachynautes*, *Viridibucco*, *Odontospiza*, *Arizelopsar*, *Poneropsar*, *Notiocichla*, *Anteliocichla*, *Cichlomyia*, *Arizelomyia*, and *Helionympha*. With regard to these it may be fairly said that most of them rest on very slender characters, and such as in our opinion hardly justify generic separation. Dr. Hartert, who has lately revised the Cypselidæ most carefully (Das Tierr., Lief. i.), does not separate "*Tachynautes*" from *Tachornis*. The Glossy Starlings of Africa have been "cut up" too much already, and should have the number of their generic terms reduced rather than augmented, and the same may be said of the Muscicapidæ. Even Dr. Sharpe, who admits 63 genera of this family, allows *Muscicapa cærulescens* to remain in *Muscicapa* and *M. latirostris* in *Alseonax*. But Mr. Oberholser makes them both the types of new genera!

Other changes in the names of well-known species are suggested by our author, who, instead of sticking to his text (the Birds of Kilimanjaro), has wandered far away to try to upset the nomenclature of birds which have little or nothing to do with his subject.

20. *Reid on the Oyster-catchers.*

[Sombre el jenero *Hæmatopus*. Por Edwin C. Reid, Director del Museo de Concepcion. Rev. Chilena de Hist. Nat. ix. nos. 2, 3 (1905).]

This is a short note on the Oyster-catchers of the Chilian coast by Mr. Reid, who appears to have moved his quarters from Valparaiso to Concepcion.

21. *Reiser on the Ornithological Results of the Austrian Expedition to Northern Brazil.*

[Ueber die ornithologische Ausbeute während der von der kais. Akademie der Wissenschaften im Jahre 1903 nach Brasilien entsendeten Expedition. Anz. Ak. Wien, no. viii. (July, 1905).]

The objects and the route of the Austrian Expedition to N.E. Brazil in 1903 were described in Herr Reiser's letter of March 1904 (see 'Ibis,' 1904, p. 471). Dr. Steindachner read a short report on the birds collected during the expedition, drawn up by Herr Custos Reiser, before the Academy of Sciences of Vienna on the 13th of July last. The specimens were stated to be 1347 in number, representing 354 species, amongst which were examples of five new to science. These were named *Rhamphastos theresæ*, *Megaxenops* (gen. nov.) *parnaguæ*, *Synallaxis griseiventris*, *Bubo magellanicus deserti*, and *Rhynchocyclus rufescens catingæ*. The complete account of the Collection is promised in 1906.

22. *Rothschild and Hartert on the Birds of the Solomon Islands.*

[Further Contributions to our Knowledge of the Ornis of the Solomon Islands. By the Hon. Walter Rothschild, Ph.D., and Dr. Ernst Hartert. Nov. Zool. xii. pp. 243–268 (1905).]

Messrs. Rothschild and Hartert continue their account of the splendid collections made by the indefatigable naturalist Albert S. Meek in the Solomon Islands. Meek has now visited Rendova, Gizo, New Georgia, Choiseul, and Bougainville, and, notwithstanding the ferocity of the natives and the bad climate, has succeeded in attaining most valuable results. The number of actual novelties in these last collections is small, but a few wonderful discoveries have been made, such as *Microgoura meeki*, *Halcyon bougainvillei*, and *Corvus meeki*. These have been already characterised in the 'Bulletin' of the B. O. C., but both sexes of the conspicuous Kingfisher *Halcyon bougainvillei* are now figured, and the following new subspecies are described:—*Phlegœnas beccarii intermedia*, *Astur etorques rubianæ*, *A. e. bougainvillei*, *Charmosynopsis placentis pallidior*, *Alcedo ispida salomonensis*, *Ceyx lepida nigro-maxilla*, *Halcyon tristrami alberti*, *Monarcha kulambangræ meeki*, and *Graucalus pusillus ombriosus*.

Judging by the birds, the authors are disposed to distinguish four groups of islands in the Solomon Archipelago, which they denominate (*a*) the northern chain, (*b*) the central group, (*c*) the Guadalcanar group, and (*d*) the southern group. The large islands Malaita and Rennel and many of the smaller are as yet unvisited, so Mr. Meek has much work still before him.

23. *Schillings's Travels in German East Africa*[*].

[Mit Blitzlicht und Büchse: Neue Beobachtungen und Erlebnisse in der Wildnis inmitten der Tierwelt von Aequatorial-Ostafrika. Von C. B. Schillings. Zweiter Abdruck. R. Voigtländers Verlag in Leipzig, 1905.]

In the Library of the Zoological Society may be seen a copy of this work, with its curious title. It is crammed with text-figures taken from the author's photographs, and is well worthy of attention by the student of tropical Nature. Many of the figures represent birds—Vultures, Marabous, Storks, Cormorants, Flamingos, Ibises, and the remarkable nests of *Textor albirostris*.

An Appendix contains a systematic list of the 355 species of birds obtained by Herr Schillings, drawn up by Dr. Reichenow, with short field-notes by the collector. An uncoloured plate represents three novelties discovered by this energetic explorer—*Calamocichla schillingsi*, *Erythropygia plebeia*, and *Ploceus schillingsi*.

24. *Schiøler on the Wild Duck of Greenland.*

[Om den grönlandske Stokand. Af E. Lehn Schiøler. Vid. Meddel. Khbvn. 1905, p. 239.]

Dr. Lönnberg has pointed out to Mr. Schiøler that the Wild Duck of Greenland, which he has lately separated as *A. boschas spilogaster* (*cf.* 'Ibis,' 1905, p. 640), had been previously named *Anas conboschas* by C. L. Brehm in his 'Handbuch d. Naturgeschichte aller Vögel Deutschlands,' as long ago as 1831. Further remarks are added.

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[*] Since this notice was written a translation of this remarkable work into English has been published by Messrs. Hutchinson & Co. under the title "With Flashlight and Rifle in Equatorial East Africa."

25. *Sclater (W. L.) on the Land-Vertebrates of South Africa.*

[Science in South Africa: a Handbook and Review prepared under the Auspices of the South African Governments and the South African Association for the Advancement of Science. Edited by the Rev. W. Flint, D.D., and J. D. F. Gilchrist, D.Sc. Cape Town: T. Maskew Miller, 1905. 1 vol. 8vo, 505 pp.]

In this volume, which contains a series of articles on various scientific subjects relating to South Africa, prepared for the information of the British Association, will be found in the "Zoological Section" a short memoir on the Mammals, Birds, and Reptiles of that country, written by Mr. W. L. Sclater, the Director of the South African Museum. The portion relating to the Birds, which occupies about eight pages, gives a sketch of the different groups met with in South Africa and mentions the more remarkable species in each of them. It is here stated that about 820 South-African birds are now known, of which 380 belong to the Order Passeres.

26. *Sclater's Check-List of South-African Birds.*

[Check-List of the Birds of South Africa, containing Additions since the issue of the successive volumes of Birds in the "Fauna of South Africa" Series. By W. L. Sclater, M.A., F.Z.S., Director of the South African Museum. Price 2*s.* 6*d.*]

The main portion of this paper is occupied by a list of the species recognised in Stark and Sclater's 'Birds of South Africa,' which will be shortly completed by the issue of the fourth volume. The total number of species described in that work is 814. Additions and alterations, which have occurred during the progress of the work, raise the number in the present list to 868. Of each of these the scientific and English names are given, together with an indication of the distribution, shown by symbolical letters. There can be no doubt of the utility of this List to working Ornithologists.

Following the List we find a series of notes explanatory of the additions and corrections to be made in the names of the birds described in the 'Fauna of South Africa.' We learn here that the British Starling (*Sturnus vulgaris*), which is believed to have been first introduced by the late Mr. Rhodes, has during the last few years completely established itself in Cape Town and its suburbs, nesting abundantly in similar sites to those made use of in England. *Passer domesticus*, on the other hand, has (happily) not yet reached the Cape (where its place is taken to a certain extent by *P. arcuatus*), but it is said to have been introduced at Durban, and to be increasing there " very rapidly."

Many notes on the nomenclature and arrangement of birds in the South-African List will be found in this part of the memoir.

27. *Scott (W. E. D.) on the probable Origin of certain Birds.*

[On the probable Origin of certain Birds. By William E. D. Scott. Reprinted from 'Science,' n. s. vol. xxii. no. 557 (September 1, 1905).]

In the List of North-American Birds it is well known that there are certain species, described by Wilson, Audubon, and others of the older writers, of which but one or two examples have ever been obtained. It can hardly be supposed, seeing the energetic and careful way in which every part of the Nearctic Region has now been searched by modern observers, that any more representatives of these species will ever be found, and they may be safely regarded as extinct. Mr. Scott selects seven of them, such as *Tringa cooperi* and *Spiza townsendi*, and discusses their relationships. He comes to the conclusion that they are "mutations," which were not perpetuated, or what are sometimes called "sports," of existing species. On the other hand, two recently discovered forms, *Helminthophaga leucobronchialis* and *H. lawrencii*, which are usually regarded as hybrids, and were quite unknown in the days of Audubon and Wilson, Mr. Scott considers to be recently produced "mutations" which are increasing in number.

As regards the first of these hypotheses, we are disposed to agree with Mr. Scott, but as regards the second, more evidence, as Mr. Scott confesses, is required.

The "strange case of *Athene chiaradiæ*" (see 'Ibis,' 1903,

p. 1, pl. i.) is adduced as another example of "mutation," and the *Coturnix lodoisiæ* of Verreaux and the so-called "Sabine's Snipe" are possibly referable to the same class of phenomena.

28. *Suschkin on the Classification of the Accipitres.*

[Zur Morphologie des Vogelskelets. Vergleichende Osteologie der normalen Tagraubvögel (Accipitres) und die Fragen der Classification. Von P. P. Suschkin. Nouv. Mém. Soc. Imp. d. Nat. Moscou, xvi. livr. 4 (1905).]

This is an excellent piece of work, but what is to be the fate of ornithology if the settlement of a portion of the Birds-of-Prey requires 250 quarto pages especially well written by a careful expert!

The author draws attention to the untrustworthy material which served for the illustrations of Dr. A. B. Meyer's well-known 'Photographs of Bird-Skeletons,' and since these are often used as standard references, he has criticised in detail a number of grave errors in identification.

Suschkin divides the Accipitres (exclusive of *Pandion* and *Serpentarius*) into two families, of which he gives the following definitions based upon external characters:—

Fam. FALCONIDÆ.—The palatal surface of the rhamphotheca is furnished with a sharp longitudinal ridge, which gradually diminishes forwards.

The limit of the pterylosis on the sides of the lower jaw appears as a straight or gently curved line directed downwards and forwards; or, if the plumage does not extend upon the under-jaw, the crown of the head is covered with fine feathers.

Fam. AQUILIDÆ.—The palatal surface is devoid of a longitudinal ridge; there is often an elevation on the posterior palatal rhamphotheca, but it ends in this case always abruptly in front.

The feathering of the sides of the lower jaw appears in the shape of an acute angle; or, if the sides of the jaw are bare, the crown is also bare or covered with down only.

The Falconidæ are divided into the subfamilies: 1. *Falconinæ*; 2. *Poliohieracinæ*; 3. *Polyborinæ*; 4. *Herpetotherinæ*. Tabular keys of these subfamilies and of the orders are supplied, based upon external characters, for identification. The taxonomic characters proper are discussed at length in the text.

Very reasonably the author concludes that subfamilies 1 and 2 represent two parallel groups, equivalent to each other. Subfamily 4, composed of *Micrastur* and *Herpetotheres*, arises from the bifurcation of the two main branches; *Microhierax* and *Poliohierax* are two closely allied genera, forming a little twig off the Falconine branch.

Lastly follow very readable and interesting remarks on geographical distribution, œcology, convergence of genera, and similar questions, all represented in a way that shews the intense amount of labour and thought which the author has bestowed upon his favourite group.

29. *Tredgold on the Quails of Matabeleland.*

[On the extensive Appearance of Quail in Matabeleland, 1901–2. By C. H. Tredgold. Proc. Rhod. Sc. Assoc. vol. iii. p. 3 (1902).]

The 'Proceedings of the Rhodesia Scientific Association' (Buluwayo, 1899–1905), with a copy of which we have lately been favoured, contain (amongst many other interesting communications) a paper by Mr. Tredgold on the Harlequin Quail (*Coturnix delegorguei*), which occasionally appears in enormous flocks in various parts of Matabeleland, and nests there, but entirely disappears at other times.

30. *Tschusi zu Schmidhoffen on the Migration of the Waxwing.*

[Ueber den Zug des Seidenschwanzes (*Ampelis garrula* L.) im Winter 1903–4. Von Viktor Ritter v. Tschusi zu Schmidhoffen. Ornis, vol. xiii. (1905).]

This memoir contains an elaborate account of the great irruption of the Waxwing into Middle and Southern Europe in the autumn and winter of 1903–4. The birds spread over France, Germany, Northern Italy, Austria, Hungary, and Roumania. Beginning in October 1903, they are recorded from various localities until the following May. In some places large flocks, in others small flocks and single specimens, were observed. In Great Britain they appear to have been not quite so numerous as in some districts of the Continent, but four instances of their appearance in England, four in Scotland, and one in Ireland are mentioned by the author of this paper, and others have been recorded in the 'Zoologist' and various journals (see also Mr. Workman's letter, 'Ibis,' 1904, p. 307).

31. *Van Hoeffen on South-Polar Birds.*

[Die Tierwelt des Südpolargebiets. Von Prof. Dr. E. Van Hoeffen in Kiel. Sonderabdr. a. d. Zeitschr. d. Gesellsch. f. Erdk. z. Berlin, 1904.]

This extract from the 'Zeitschrift' of the Geographical Society of Berlin contains a chapter by Prof. Van Hoeffen on the South-Polar Fauna, in which will be found some remarks on the Antarctic Penguins and other birds, with a few illustrations in the text. A much more detailed account of the ornithological results of the German South-Polar Expedition has, however, been published by the same writer in the 'Journal f. Ornithologie' (1905, Heft iii.). During the year's detention of the Expedition in the ice on the shores of King-William's Land, only ten species of birds were observed. Of these the distinctively Antarctic forms were but five—namely, the two Penguins (*Aptenodytes forsteri* and *Pygoscelis adeliæ*), the Skua Gull (*Stercorarius maccormicki*), and two species of Petrel (*Thalassæca antarctica* and *Pagodroma nivea*). The Emperor Penguin was observed throughout the year, usually in large flocks of 300 or so, and was apparently breeding on the ice, as in the beginning of December great numbers of young birds in down were met with. The Antarctic Penguin was only seen from November to March.

32. *Winge on the Birds of the Danish Lighthouses.*

[Fuglene ved de danske Fyr i 1904. 22de Aarsberetning om danske Fugle. Ved Herluf Winge. Vidensk. Meddel. fra den naturh. Foren. i. Kbhvn. 1905, p. 168.]

We have now before us the twenty-second of these admirable reports, relating to the year 1904. The specimens of birds sent to the Zoological Museum of Copenhagen from the Lightships and Lighthouses in that year were 620, which are referred to 56 species, against 750 specimens belonging to 50 species in 1903 (see 'Ibis,' 1904, p. 163). The notes on them are arranged in the usual methodical manner. The most numerous species in 1904 were *Alauda arvensis* (248 specimens), *Turdus musicus* (38), and *Erithacus rubecula* (38).

33. *Wytsman's 'Genera Avium.'*

['Genera Avium,' edited by P. Wytsman. With Contributions by Messrs. P. L. Sclater, R. Bowdler Sharpe, W. R. Ogilvie-Grant, E. Hartert, C. L. Hellmayr, T. Salvadori, &c. Parts 1–5. Brussels, 1905.]

We have now before us the first five parts of 'Genera Avium,' the plan and scope of which have already been explained to our readers (see 'Ibis,' 1904, pp. 171, 309).

Part 1 (price 2*s*. 11*d*.) contains a reprint of Mr. Hartert's essay on the Eurylæmidæ, which was originally issued as a specimen of the projected work (see 'Ibis,' 1904, p. 309). The Family is divided into two Subfamilies, Calyptomeninæ and Eurylæminæ. Of the former Mr. Hartert recognises one genus with 3 species, of the latter six genera with 8 species and 7 subspecies. The coloured plate by Keulemans represents *Serilophus lunatus rothschildi* and details of other species.

Part 2 (price 3*s*. 1*d*.) contains an account of the Family Todidæ, by Mr. P. Wytsman. This Family has only the one genus *Todus*, a very peculiar group, restricted to the Greater Antilles. It has four representative forms in the four islands in which it occurs, which the author treats as subspecies! As the forms are sufficiently distinct to be recognised we cannot agree to this view, and prefer to consider them full species, as all former authors have done. The four species are all figured in the coloured plate.

Part 3 (price 2*s*. 9*d*.), by Count Salvadori, contains the Stringopidæ, with the single genus *Stringops* (of New Zealand), which has one certain species, for the so-called *S. greyi*, as the author observes, has been probably based on an individual variety. The plate annexed represents the typical form of *Stringops* and various details.

Part 4 (price 2*s.* 11*d.*), also by Count Salvadori, contains the Nestoridæ of New Zealand, consisting of the single genus *Nestor*. The author recognises six species of this curious form. The plate represents *Nestor septentrionalis* and details of other species.

Part 5 (price 6*s.*), also by Count Salvadori, relates to the Cacatuidæ, which are divided into two subfamilies—Cacatuinæ and Calopsittacinæ. In the first of these the author recognises five genera with 26 species altogether. The second subfamily contains only one species, *Calopsittacus novæ-hollandiæ.*

Two excellent coloured plates represent *Cacatua goffini*, *Calopsittacus novæ-hollandiæ*, and various details.

XII.—*Letters, Notes, Extracts, &c.*

We have received the following letters addressed to "The Editors of 'The Ibis'":—

Sirs,—It may interest the readers of 'The Ibis' to learn that I have lately had the opportunity of examining a specimen of the rare Albatros described by Salvin in 1896 as *Thalassogeron layardi* (Cat. B. xxv. p. 450), of which, so far as I am aware, but one example is yet known. The specimen in question was obtained by the late Mr. J. O. Marais off the Knysna Heads, on the eastern coast of the Colony, on the 28th of August, 1899, and was acquired, with other birds collected by the same gentleman, by the Pretoria Museum. Dr. Gunning, at my request, has kindly allowed me to examine it, and I find it to agree well with the description and measurements of the type in the British Museum as given by Salvin.

If the genus *Thalassogeron* is to be maintained (of which Mr. Rothschild has lately expressed some doubt—see Bull.

B. O. C. xv. p. 15), *Thalassogeron layardi* will certainly belong to it, being closely allied to *T. cautus*, and shewing the membranous band of soft skin which separates the culminicorn from the latericorn and is characteristic of that group.

The new specimen of *T. layardi* is labelled "male" and appears to be quite adult.

I am, Sirs, yours &c.,
W. L. Sclater.

South African Museum,
Cape Town,
September 20th, 1905.

[If Mr. Sclater will look at the last number of 'The Ibis' (which he had not seen when he wrote his letter) he will find (p. 559) that it has now been decided by Mr. Ogilvie-Grant and Mr. Rothschild that *Thalassogeron layardi* is the same as *Diomedea cauta* of Gould, described in 1840, and must therefore bear the latter name. It is of great interest to have a second record of this fine Albatros on the South-African coast.—Edd.]

Sirs,—You may like to hear that all is now well with our Expedition. We have had a good journey up here from Port Lamy—quite an easy one after the Lake-Chad troubles. We are leaving to-day to explore the Ba-mingui, but the country (formerly the happy hunting-grounds of Rabeh and Senoussi) is now uninhabited, so that the food-supply will be a difficult question. We hope, at present, to get up the river for five days' journey and then return to our base here, whence we may proceed to Yakoma on the Ubanghi. I have not heard from England for a long time, but I have received rumours that the fishes of the Expedition sent home have turned out well.

My bird-collection now numbers nearly 1400 specimens. I have met with some very interesting species. I hear that the doctor with the Chevalier Expedition collected Birds. I hope that his array was not a formidable one. My birds have not been sent to the British Museum, as you know my liking to learn something for myself about what I have collected. I hope when I return to be able to shew you some interesting specimens. Another ten months should see the Expedition finished, if all goes well.

My Portuguese collector has been most useful. What with the transport and the various collections, he has had his hands full. Birgimi is a poor country; the villages on this fine river are few and far between. There is no native traffic of any kind. The Sultan of Wadai has again been giving trouble, and this makes any entrance into his dominions impossible. On this account we have had to give up our journey to Lake Fittsi.

Yours &c.,
BOYD ALEXANDER.

Irene,
Near R. Ba-mingui,
August 8th, 1905.

[We are informed that Irene, or Irena, is in about 8° N. lat. and 18° E. long., on the Shari, of which the Ba-mingui is one of the principal tributaries.—EDD.]

SIRS,—I am writing a line to tell you that we have arrived at Las Palmas, where we coal. As we shall only be here a day or two, I shall not be able to do much in the way of collecting. We go on to St. Paul's Rocks, then to Bahia (to coal), and thence to South Trinidad, where I hope to get some good Petrels. After that we proceed to Tristan d'Acunha, Inaccessible Island, and Gough Island, and from the last island to Cape Town, where we get our first mail. I have seen only the usual sea-birds at present. Two days out from England a Willow-Wren and a Robin came on board, and the following day a Stock-Dove. I will write again from Bahia.

Yours &c.,
MICHAEL J. NICOLL.

'Valhalla,' R.Y.S.,
November 12th, 1905,
Las Palmas.

Sirs,—Col. Godwin-Austen's notice of my old friend, William Blanford, in the last number of 'The Ibis' leaves little to be desired, but I think that a few lines on our journey together in Sikkim may be of interest, as it has considerable bearing on our present knowledge of the district *.

Probably no one, alive or dead, has ever had such a wide personal knowledge of the physical, geological, and zoological features of British India as Blanford, and no man has written on these subjects with a clearer and sounder perception of the geographical distribution of the birds, mammals, reptiles, and land-shells. Though apparently not a man of robust constitution, he had passed twenty-five years of his life in the most unhealthy parts of India, and, as I can personally testify, was a very hard man to tire. I first met him in Sikkim in 1870, when he joined me in an expedition which I had planned to the Tibetan frontier. This district had not been visited since Sir Joseph Hooker and Dr. Campbell had been made prisoners by the Sikkim Rajah twenty-two years before. The whole of this journey was done on foot, and we calculated that during the course of ten weeks we had ascended about 115,000 feet at elevations of from 1000 to 19,000 feet. But though we discovered the Jelap La Pass, which, until the late military expedition to Lhasa, was the chief trade-route between Sikkim and Tibet, we failed, owing to native opposition, to get beyond the sources of the Tista River, or to reach the home of the great Tibetan stag. I consider that it was largely owing to Blanford's knowledge of the native character and language, and his tact in dealing with the Tibetans, that we were able to do what we did without serious results; for more than once our anxiety to cross the frontier led to friction with the guards that might easily have ended in violence if they had not been impressed by the great firmness of his character. For though Blanford was no blusterer, he had a great deal of

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* [This letter was originally received in the form of an obituarial notice, but, as that of Col. Godwin-Austen had been previously accepted, Mr. Elwes has kindly made the necessary alterations.—Edd.]

determination and was not easily daunted by the difficulty of the country or the persistent opposition with which we met. During the whole of this expedition I lived with Blanford in one small tent, constantly wet, and we both did harder work than we had ever done before or have done since; and though my education, surroundings, and tastes, apart from our common love of Natural History, had been extremely different from his, yet I can truthfully say that we never had an unpleasant word, and that a better companion in dangers and hardships no man could have. This journey, which was inspired by Sir Joseph Hooker's 'Himalayan Journals,' and this association with a naturalist of the first rank had a great influence upon much of my future work, and though, when Blanford returned to England, married, and settled in London, our respective avocations did not bring us much together, I always considered him and the late Osbert Salvin my best zoological advisers.

Blanford was all his life a hard worker, and the scientific papers published by him between 1852 and 1901 (of which a list is given in the 'Geological Magazine' for Jan. 1905, with a portrait) number 150, including 22 on ornithology. These make a worthy record of his very varied experience, and might form the groundwork of a most interesting biography.

As Editor of the series of works on the Fauna of British India, published by Government, he was unrivalled, and will be very hard to replace. His official work in these various spheres was somewhat tardily recognised by the Companionship of the Indian Empire, which is often given, at an earlier period in life, to men who have not a tenth part of his distinction. But the Royal Medal of the Royal Society and the Wollaston Medal of the Geological Society were probably more highly valued by him, and his memory will long remain honoured by all who knew him.

Yours &c.,
H. J. Elwes.

Mr. Howard Saunders requests us to publish the following letter, which he has received from Dr. Victor Fatio:—

Cher Monsieur,—En vous réitérant mes remerciements pour l'aimable article que vous avez bien voulu publier dans 'l'Ibis' (1905, pp. 120–122), sur la seconde partie du volume des Oiseaux de ma 'Faune des Vertébrés de la Suisse,' je désire répondre en deux mots à quelques observations que vous fîtes alors, en suivant une à une vos remarques, dans l'ordre où vous les avez enregistrées vous-même. Pardonnez-moi de revenir si tardivement sur des questions auxquelles, comme je vous l'ai écrit déjà, des circonstances indépendantes de ma volonté m'ont empêché de donner plus tôt réponse

Ainsi que je l'ai dit, en tête du premier volume de ma Faune suisse, en 1869, je me suis imposé de douter généralement de ce que je n'avais pas vu, jusqu'à plus ample informé. En outre, comme je l'ai dit aussi, dans l'introduction à mon dernier volume paru (Oiseaux, part. 2, 1904), j'ai décrit, autant que possible, les espèces du pays, nicheuses et sédentaires surtout, sur des sujets de provenance suisse, pour ne pas faire une pure compilation et pour conserver à mon ouvrage son caractère particulier.

Si je n'ai pas parlé des représentants du genre *Porphyrio*, c'est que, ainsi que je l'ai signalé (vol. ii. part. 2, p. 1151), celui-ci nous fait jusqu'ici défaut, bien qu'un individu du *P. cæsius* ait été tué en Savoie, près de Chambéry, le 15 août 1833, selon Bailly, Ornith. Savoie, iv. p. 270, en 1854.

Quant à mon silence sur le Waldrapp de Gesner, il résulte simplement du fait que je crois à quelque erreur ou confusion de la part du célèbre naturaliste du XVI^e siècle, que je ne puis admettre les rapprochements faits dernièrement, dans les 'Novitates Zoologicæ,' et que je ne cesserai de douter de la présence passée de ce soi-disant Ibis en Suisse qu'alors qu'on en aura trouvé des ossements ou restes fossiles dans le pays. Je vous en écris, à part, plus longuement.

Pour ce qui concerne la nichée ou reproduction en Suisse de la Bécassine double (*Gallinago major*) et de la Bécassine sourde (*G. gallinula*), vous n'êtes pas le premier qui ait douté de la possibilité de leur reproduction en Europe moyenne. On n'admet pas sans conteste des exceptions flagrantes à des règles que l'on a l'habitude de considérer comme établies et jusqu'à un certain point invariables. Moi-même, je partageais votre scepticisme jusqu'au moment où celui-ci a été fortement ébranlé par les assertions réitérées de plusieurs ornithologistes compétents et chasseurs sérieux de différentes parties du pays.

J'ai, pour *Gallinago major*, quatre citations manuscrites de nichées en Suisse, sauf une, peut-être sujette à caution, toutes dans les parties orientales du pays, dans la région du lac de Constance ou dans le bas de la vallée du Rhin, au-dessus de celui-ci, dans les marais et environs de Zizers, en particulier.—Feu le Colonel H. de Salys, excellent ornithologiste et bon observateur, dans son "System. geordnete Uebersicht der Vögel Graubündens" (Jahresb. der naturf. Gesell. Graubündens, N. F., viii. Jahrg. 1861–62), écrivait même: la *Telmatias major* se trouve d'avril à novembre dans le Rheinthal. Après cela, j'ai cru pouvoir dire: *elle nicherait* (soit, elle niche dit-on) de temps à autre dans le bas de la vallée du Rhin.

Relativement à la nidification de *Gallinago gallinula*, j'ai huit données manuscrites, moitié de chasseurs dignes de foi, moitié d'ornithologistes compétents, plus deux citations imprimées d'auteurs de toute confiance.—En disant que l'espèce niche çà et là à l'Ouest, au Centre et à l'Est, dans le pays, je n'ai évidemment pas voulu parler d'une multiplication régulière de la Bécassine sourde en Suisse, mais bien de nichées, suivant les localités, rares ou exceptionnelles. Cependant, de Salys (*l. c.*) écrivait, en 1861, que la *Telmatias gallinula* se montrait dans le Rheinthal de mars à novembre.

Mon père même, J. G. Fatio-Beaumont, dans son "Verzeichniss der Vögel welche sich im Thale von Genf und an den Seiten der dasselbe einschliessenden Berge finden"

('Naumannia,' vi. no. 12, p. 167), considérait, en 1856, la *Gallinago gallinula* comme oiseau nicheur (Brutvogel) dans le bassin du Léman, où elle demeure quelquefois aussi en hiver. Les îlots de l'Arve et les marécages avoisinants, près de Gaillard, non loin de Genève, sont particulièrement cités comme lieux de nichée éventuelle, dans les notes manuscrites père.

Baldamus, traducteur de l'article de ce dernier dans la 'Naumannia,' en 1856, en note au bas de la première page, exprimait alors son étonnement, en face de nichées signalées en Suisse des Faucons émérillons, Hibou brachyote, et Bécassine sourde, se demandant s'il était possible que ces espéces puissent nicher vraiment tellement au Sud. Il ne connaissait pas l'attraction déconcertante que peut exercer le voisinage des Alpes sur certains oiseaux septentrionaux, soit hivernants, soit attardés au printemps.

Il me semble que ces quelques données viennent corroborer plus ou moins, pour les deux Bécassines en question, diverses observations faites en d'autres pays, en Allemagne, par exemple, et dans le Tyrol, même dans le nord de l'Italie, plus au Sud.

Pour ce qui est de la Maubèche, *Tringa canutus*, la remarque concernant une prétendue citation par moi de nidification en Suisse repose uniquement sur une confusion ou une erreur de lecture, car (vol. ii. part. 2, p. 977, lignes 15 & 16), en parlant de la représentation et des agissements de l'espèce en Suisse, j'ai péremptoirement dit : *elle séjourne généralement peu dans le pays et je ne crois pas qu'elle niche dans nos régions* *.

Un mot, enfin, à propos de la *Tringa temmincki*; car, je serais mal venu de vouloir défendre mon dire de nidification de ce petit Bécasseau en Angleterre, en face des doutes émis à cet égard par l'auteur de l'excellent Manuel des Oiseaux d'Angleterre, mon savant contradicteur. Je ne suis plus là, en effet, dans mon champ d'exploration, tandis que M. H. Saunders est au contraire sur son propre terrain.

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* [This was a *lapsus calami*, for which apologies are offered to Dr. Fatio.—H. S.]

Il est bien possible que j'aie tort et lui raison, dans le cas particulier, et qu'il y ait là, en effet, une erreur sur la quelle je remercie mon honorable collègue d'avoir bien voulu attirer mon attention.

Report on the British Museum for 1904–5 [*].—The Parliamentary Report on the progress of the British Museum for the year 1904–5 contains the following passages concerning the Bird-department of the Natural History Museum at South Kensington, in which we are all much interested:—

The remounting (for the Public Gallery) of the Hoopoes, Colies, Trogons, Touracos, Toucans, Honey-guides, and Woodpeckers has been completed. The pier-cases containing the British Birds in the Pavilion have been re-arranged, and a number of specimens have been replaced by new and well-mounted ones. An illustrated guide to the Bird-Gallery is now issued to the public (*cf.* 'Ibis,' 1905, p. 486). Progress has been made with the osteological collection, and a large number of eggs have been registered and incorporated. The skeletons of the remaining Coraciiformes, viz., the Hornbills, Toucans, and Woodpeckers, have been labelled, catalogued, and placed in cabinets, also those of the Momotidæ and Eurylæmidæ.

The total number of accessions to the Class Aves during the year was 17,903, of which the following deserve special notice:—

Thirty-four Birds and fifty-one eggs from Darjeeling; presented by Mr. B. B. Osmaston.

Three hundred and thirty-one Birds from Upper Burma, including the types of a new species (*Pomatorhinus mearsi*); presented by Captain A. Mears.

Four hundred and ninety-seven Birds from the Malay Peninsula, including the type of a new Bulbul (*Pycnonotus robinsoni*); presented by the Royal Society and the Universities of Edinburgh and Liverpool.

[*] For the previous Report see 'Ibis,' 1904, p. 667.

One thousand Birds and one hundred and fifty-four eggs from Fohkien, China; presented by Mr. C. B. Rickett.

Eighty Birds from the Moluccas, including examples of sixteen species new to the collection, collected by N. Kühn; purchased.

One hundred and sixteen Birds from New Guinea and the Solomon Islands, collected by Mr. A. Meek; purchased.

Sixty-one Birds from Mindanao and Waigiou, collected by Mr. J. Waterstradt; purchased.

Sixty Birds from the Atlas Mountains, including the types of three new species (*Parus atlas*, *Motacilla subpersonata*, and *Cotile mauritanica*); presented by Mr. E. G. B. Meade-Waldo.

Three hundred and fifty-six Birds from the Azores, collected by Mr. W. R. Ogilvie-Grant, including the types of three new subspecies (*Turdus merula azorensis*, *Sturnus vulgaris granti*, and *Columba palumbus azoricus*); presented by the Hon. Walter Rothschild.

Six hundred and twenty-seven Birds from Cameroon, including the types of two new species (*Dryotriorchis batesi* and *Cypselus batesi*), collected by Mr. G. L. Bates; purchased.

Four hundred and seventy-two Birds from Sierra Leone, including the type of a new species (*Amaurocichla kempi*), collected by Mr. Robin Kemp; purchased.

Twenty-five birds' skeletons from the Gambia; presented by Dr E. Hopkinson.

Three hundred and seventy-eight Birds and fourteen skeletons from Fernando Po, including the types of three new species (*Pholidornis bedfordi*, *Cypselus sladenæ*, and *Haplopelia seimundi*), collected by E. Seimund; presented by Mrs. Percy Sladen, the Duke of Bedford, and the Hon. Walter Rothschild.

Four hundred and twenty-seven Birds and eggs from the Orange River Colony and British Bechuanaland, collected by Messrs. R. B. Woosnam and R. E. Dent; purchased.

Six hundred and thirty Birds from the Upper Nile and

Abyssinia, collected by P. Zaphiro; presented by Mr. Y. Macmillan.

Five hundred and eighty-seven Birds from Uganda; purchased.

Four hundred and five Birds from Uganda, including the types of two new species (*Francolinus mulemæ* and *Mesobucco radcliffei*); presented by Colonel C. Delmé Radcliffe.

Eleven Birds from British East Africa, including the types of three new species (*Cyanomitra alinæ*, *Haplopelia jacksoni*, and *Macronyx sharpei*); presented by Mr. F. J. Jackson, C.B.

Forty-one Birds from British East Africa; presented by Captain R. E. Drake-Brockman.

One hundred and two Birds from British East Africa and from Florida; presented by Mr. C. B. Storey.

Four hundred and eighty-three Birds from the West Indies, collected by Dr. R. Bowdler Sharpe during the voyage of the 'Emerald'; presented by Sir Frederick Johnstone, Bart., and Laura, Countess of Wilton.

One hundred and twenty-two eggs from Costa Rica, collected by Mr. C. F. Underwood; purchased.

Four hundred and sixty-five Birds and eggs from Paraguay, collected by Mr. W. Foster; purchased.

Fifty-five Birds from New Zealand, the Kermadec and other Antarctic Islands, including specimens of *Mergus australis* and other rare species; presented by the Earl of Ranfurly.

Four hundred and thirty-seven Birds collected by Mr. M. J. Nicoll during the voyage of the 'Valhalla'; presented by the Earl of Crawford, K.T., F.R.S.

Two eggs of the Kagu (*Rhinochetus jubatus*); purchased.

Expedition to Mount Ruwenzori.—An expedition for the further geographical and biological exploration of Mount Ruwenzori in the Uganda Protectorate, arranged in the Ornithological Department of the British Museum, left England in September last. It is conducted by Mr. R. B. Woosnam, late of the Worcester Regiment, with whom are associated Mr. R. E. Dent, late of the same regiment, the Hon. Gerald Legge, M.B.O.U., and Mr. A. F. R. Wollaston as Medical Officer. Mr. Douglas Carruthers accompanies them as Taxidermist. The party will proceed to Mombasa and take the railway and steamer across Lake Victoria to Entebbe. Thence they will probably go by land direct to Ruwenzori and select a convenient spot as the basis of their operations.

Expedition to the Galapagos.—We learn from 'The Condor' (vol. vii. p. 148) that a new expedition was sent by the Californian Academy of Sciences, during the past summer, to the Galapagos Islands, to be absent nineteen months. The expedition was organised through the efforts of the Director of the Museum, Mr. Leverett Mills Loomis, who has spared neither time nor pains to bring it to a successful conclusion. The personnel includes Mr. R. H. Beck (Chief), Messrs. E. W. Gifford and J. S. Hunter (birds and mammals), Mr. A. W. Stewart (plants), Messrs. J. R. Stevin and Ernest King (reptiles), and other collectors. They go in a two-masted schooner-yacht, purchased from the Navy Department, and the equipment is stated to include practically everything that such an expedition can possibly need.

The members will make special efforts to secure a very complete collection of birds, while their long stay in the Islands will enable them to ascertain many biological facts of importance, as well as to gather data concerning temperature and rainfall, and the effects of these on distribution. They will probably visit Socorro, Cocos, and other Pacific Islands on the route out.

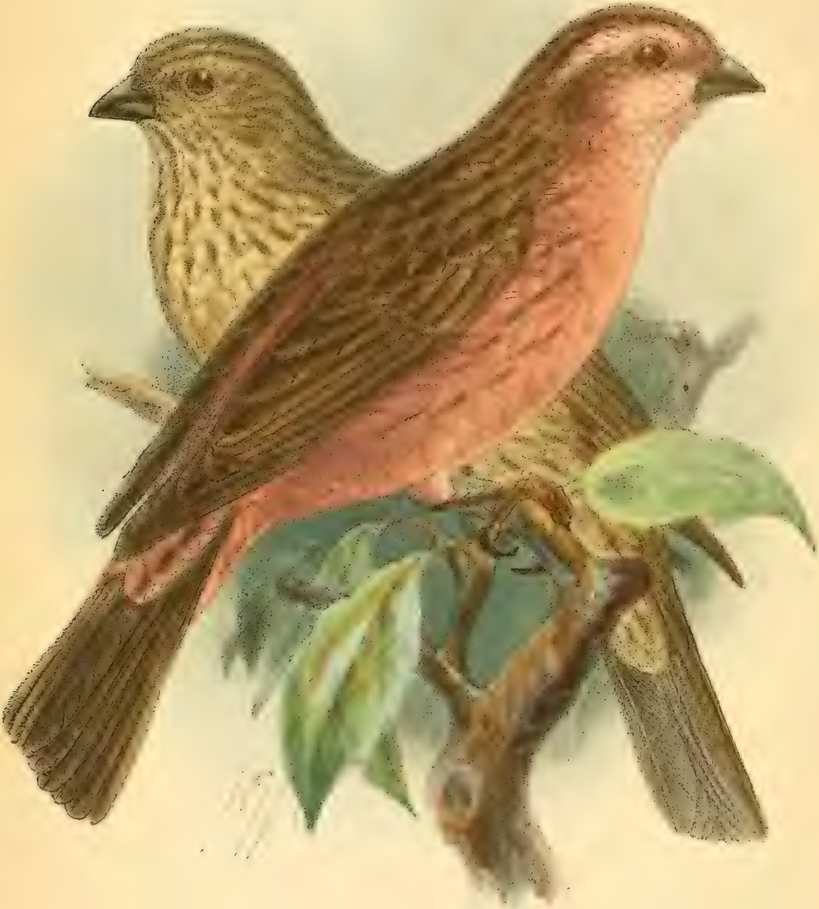
Meeting of the South-African Ornithologists' Union.—The second Annual Meeting of the S. A. O. U. was held in the Transvaal Technical Institute at Johannesburg on August 30th, 1905, at 5 P.M. Mr. W. L. Sclater, M.A., F.Z.S. (President), was in the Chair, and a number of

Members were present. Dr. P. L. Sclater, F.R.S., Mr. A. H. Evans, M.A., F.Z.S., and Mr. A. Trevor-Battye, M.A., F.Z.S., all Members of the B. O. U., were present. The Secretary, Mr. A. K. Haagner, read the Annual Report, which shewed that the Membership now amounted to 80, and that satisfactory progress had been made. The Report was adopted.

Twenty-one new Members were elected. The following Officers were then elected for the ensuing year:—*President*, W. L. Sclater, M.A., F.Z.S., M.B.O.U.; *Vice-Presidents*, Dr. J. W. B. Gunning, F.Z.S., and Professor Duerden; *Hon. Secretary*, A. K. Haagner, F.Z.S., M.B.O.U.; *Hon. Treasurer*, H. O. Collett; *Council*, L. E. Taylor, M.B.O.U. (Transvaal), John Wood (Cape Colony), J. G. Hatchard, F.R.A.S. (Orange River Colony), A. D. Millar, Col.M.B.O.U. (Natal), and G. A. K. Marshall, F.Z.S. (Rhodesia).

Dr. Sclater, F.R.S., one of the original Members of the B. O. U., who is an Honorary Member of the S. A. O. U., congratulated the Union on the success which had attended its first year's operations and impressed upon Members the necessity of founding Museums and of making collections of local fauna (birds in particular) a prominent feature of them.—[A. K. H.]

The Extinct Penguins of Antarctica.—Dr. Nordenskjöld has already announced the discovery of the remains of some extinct species of Penguins in the Eocene formation of Seymour Island during the sojourn of the Swedish Antarctic Expedition in that part of the South-polar Seas. These remains have now been carefully studied by Mr. Carl Wyman, who describes the results in a recently published part of the 'Wissenschaftliche Ergebnisse der Schwedischen Südpolar-Expedition' (Band iii. Lief. i.). It appears that the Eocene Penguins deviated in some remarkable points of structure from those of the present day and must be referred to new genera, which are named *Anthropornis, Delphinornis, Ichthyopteryx*, and *Eospheniscus*. Of these *Anthropornis nordenskjöldi* is shown to have been considerably larger than the existing Emperor Penguin (*Aptenodytes forsteri*).



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PROPASSER WALTONI

THE IBIS.

EIGHTH SERIES.

No. XXII. APRIL 1906.

XIII.—*On the Birds of Southern Tibet.*—Part II.*

By Captain H. J. Walton, Indian Medical Service.

(Plate XIV.)

43. Pycnorhamphus carneipes.

Pycnorhamphus carneipes (Hodgs.); Oates, Faun. Brit. Ind., Birds, ii. p. 200; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 142.

No. 1854. ♂ adult. Gauthong, 12,000 feet, Jan. 25, 1904. Bill, upper mandible blackish horny, lower mandible whitish horny; feet fleshy brown; iris dark brown.

Fairly numerous at high elevations in the Chumbi Valley in winter.

44. Propasser thura.

Propasser thura (Bp. & Schl.); Oates, Faun. Brit. Ind., Birds, ii. p. 213.

No. 1853. ♀ adult. Near Gauthong, Chumbi Valley, 14,000 feet, Jan. 24, 1904. Bill and feet dark brown; iris dark brown.

Nos. 1857, 1857 a, 1855, 1856. ♀ adult. Near Gauthong, Chumbi Valley, 14,000 feet, Jan. 25–26, 1904.

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* Concluded from p. 84.

I found this bird common in the Chumbi Valley in January, where I generally saw it in low bushes. It is rather noisy, with a loud call-note, and feeds chiefly on the ground.

45. PROPASSER WALTONI. (Plate XIV.)

Propasser waltoni Sharpe, Bull. Brit. Orn. Club, xv. p. 95 (July 1905).

Nos. 1913, 1914, 1934. ♂ adult. Gyantse, 12,000 feet, April 20–27, 1904. Bill, feet, and iris dark brown.

Nos. 1918, 1935. ♀ adult. Gyantse, 12,000 feet, April 24–27, 1904.

No. 1970. ♂ adult. Gyantse, 12,000 feet, June 30, 1904.

No. 1974. ♀ adult. „ „ July 8, 1904.

This species differs from *P. pulcherrimus* in the absence of shaft-stripes on the under parts and in the very distinct colour of the forehead, cheeks, and ear-coverts. It was very common and breeding throughout the country from Gyantse to Lhasa. The Tibetan name is "Do-di," which is also, I think, applied to other Rose-Finches.

46. CARPODACUS EDWARDSI.

Propasser edwardsi (Verr.); Oates, Faun. Brit. Ind., Birds, ii. p. 218.

Carpodacus edwardsi Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 139.

Nos. 1812, 1813, 1817. ♀ adult. Lamteng, 9000 feet, Dec. 19, 20, 1903. Bill horny brown; feet fleshy brown; iris dark brown.

Lamteng, in Sikhim, was the only place where I saw this bird.

47. CARPODACUS ERYTHRINUS.

Carpodacus erythrinus (Pall.); Oates, Faun. Brit. Ind., Birds, ii. p. 219; Sharpe, Sci. Result. Yark. Miss., Aves, p. 41.

No. 124. ♀ adult. Khamba Jong, 15,200 feet, Oct. 4, 1903.

I shot a few specimens—all hens—of the Common Rose-

Finch at Khamba Jong in the autumn. I saw none later, and the place of this bird at Lhasa is taken by *C. lætissimus*.

+48. Carpodacus lætissimus.

Carpodacus lætissimus Walton, Bull. B. O. C. xv. p. 93 (July 1905).

No. 1990. ♂. Chaksam, Brahmapoutra Valley, 12,000 feet, July 30, 1904.

No. 2058. ♀. Lhasa, 12,200 feet, Sept. 21, 1904.

This bird occurred sparingly in the country between the Brahmapoutra River and Lhasa. A few individuals were feeding among the crops along with other Finches. As it clung to a green stalk of barley, the male, with its bright scarlet plumage, was a very conspicuous and beautiful object. The Tibetans had a few cage-birds of this species at Lhasa; they call it "Do-di-mar-mo"—"marmo" means "scarlet."

+49. Carpodacus severtzovi.

Carpodacus severtzovi Sharpe; Oates, Faun. Brit. Ind., Birds, ii. p. 220; Sharpe, Sci. Result. Yark. Miss., Aves, p. 42.

a, *b*. ♂ adult. Khamba Jong, 15,200 feet, Sept. 6, 1903.

No. 1756. ♀ adult. Khamba Jong, 15,200 feet, Oct. 31, 1903. Bill greyish horny, culmen dusky; feet dark brown; iris dark brown.

Nos. 1776, 1780, 1781, 1791. ♂; 1792. ♀ adult. Khamba Jong, 15,200 feet, Nov. 14–23, 1903.

No. 1805. ♂ adult. Khamba Jong, 15,200 feet, Dec. 8, 1903. Bill pale horny; feet dark brown; iris dark brown.

No. 1877. ♀ adult. Tuna, 15,000 feet, Feb. 12, 1904.

No. 1892. ♂ adult. ,, ,, March 5, 1904.

This very handsome Rose-Finch occurred in small numbers during the three months (October to December) that I spent at Khamba Jong. Solitary individuals were the rule, and all of them were extremely tame. There were a very few at Tuna throughout the rest of the winter. The bird was quite common at Gyantse in April, but left by the end of that month. I did not see it again until September; it probably does not breed in the country which we visited.

50. CARPODACUS RUBICILLOIDES.

Carpodacus rubicilloides Prjev. in Rowley's Orn. Misc. ii. p. 299, pl. liv. (1877); Sharpe, Cat. B. Brit. Mus. xii. p. 402 (1888); Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 135.

a, b. ♂ adult; *c.* ♀ adult. Khamba Jong, 15,200 feet, Dec. 2, 1903.

Nos. 1919, 1928. ♂ adult; 1920. ♀ adult. Gyantse, 12,000 feet, April 23, 25, 1904. 1928. Bill dull greenish horny; feet dark brown; iris dark brown.

No. 1960. ♀ adult. Gyantse, 12,000 feet, May 3, 1904. Bill brownish horny; feet very dark brown; iris dark brown.

Similarly distributed to the lighter form, *C. severtzovi.*

51. LINOTA RUFO-STRIGATA.

Linota rufostrigata Walton, Bull. Brit. Orn. Club, xv. p. 93 (July 1905).

No. 146. ♂ adult. Khamba Jong, 15,200 feet, Oct. 9, 1903. Bill yellowish horny, tips dusky; feet very dark brown; iris dark brown.

Nos. 1744. ♂; 1745. ♂; 1746. ♀. Khamba Jong, 15,200 feet, Oct. 9, 1903.

Nos. 1761. ♂; 1762. ♂; 1763. ♂; 1764. ♂; 1765. ♀; 1766. ♀. Khamba Jong, 15,200 feet, Nov. 4, 1903.

No. 1782. ♂. Khamba Jong, 15,200 feet, Nov. 19, 1903.

Nos. 1911. ♂; 1916. ♀; 1926. ♂. Gyantse, 12,000 feet, April 19–23, 1904.

No. 1946. ♀ adult. Gyantse, 12,000 feet, May 1, 1904.

No. 1985. ♂ adult. Nagartse, 13,000 feet, July 7, 1904.

No. 2002. ♀ adult. Lhasa, 12,200 feet, Aug. 15, 1904.

This Linnet differs from *L. brevirostris* in size. The average wing-measurement of six specimens of *A. brevirostris* is 2·96 inches; of a similar number of the Tibetan birds 3·15 inches. In all the Tibetan skins the white border to the inner web of the outer and penultimate tail-feathers is less than half as broad as in *A. brevirostris.* The lower abdomen and under-tail-coverts in the Tibetan bird are much more rufous and more heavily striped than the same parts in *A. brevirostris.*

During the summer this Twite was very common at Gyantse, and from that place to Lhasa. In the autumn flocks of twenty or thirty birds occurred on the hills around Khamba Jong, and as the weather became more severe they came right into the village. It is a common cage-bird at Lhasa. The Tibetan name is "Deng-deng-ma."

52. PASSER MONTANUS.

Passer montanus (Linn.); Oates, Faun. Brit. Ind., Birds, ii. p. 240; Sharpe, Sci. Result. Yark. Miss., Aves, p. 37; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 130.

Nos. 133. ♂ adult; 1724. ♀. Khamba Jong, 15,200 feet, Oct. 5, 1903. Both birds are in moult. Bill black, gape yellow; feet fleshy; iris dark brown.

Nos. 1760. ♂; 1767. ♀. Khamba Jong, 15,200 feet, Nov. 4, 1903.

No. 1963. ♀ adult. Gyantse, 12,000 feet, May 22, 1904.

The Tree-Sparrow is a resident in all the villages of Southern Tibet. During the winter the birds are never seen away from the immediate neighbourhood of houses, where they roost in crevices between the stones. When the crops ripen the Sparrows spend the days in the fields, but the majority return to the villages at night, and all the nests that I saw were built under the eaves of the houses. At Khamba Jong, where we were camped in the open plain about a mile from the village, the Tree-Sparrows never visited our camp.

53. PASSER CINNAMOMEUS.

Passer cinnamomeus (Gould); Oates, Faun. Brit. Ind., Birds, ii. p. 240; Sharpe, Sci. Result. Yark. Miss., Aves, p. 39.

Nos. 1907. ♂ adult; 1908. ♀ adult. Gyantse, 12,000 feet, April 19, 1904. Bill black; feet pale yellowish brown; iris dark brown.

No. 1929. ♂ adult. Gyantse, 12,000 feet, April 25, 1904.

No. 1945. ♀ adult. Gyantse, 12,000 feet, April 30, 1904.

Nos. 1964. ♂; 1966. ♀. Gyantse, 12,000 feet, May 22–23, 1904.

No. 1978. ♀ adult. Gyantse, 12,000 feet, July 9, 1904.

No. 2024. ♂ adult. Lhasa, 12,200 feet, Aug. 30, 1904.

This Sparrow was very common indeed throughout the summer from Gyantse to Lhasa, and was breeding in large numbers in the willow trees round our camp at Gyantse. It seemed to be mainly insectivorous, and did not frequent the barley-fields in anything approaching the large numbers of *P. montanus.*

The Tibetan name of the Cinnamon Tree-Sparrow is "Kang-che-go-mar" ("The little house-bird with the red head").

54. MONTIFRINGILLA BLANFORDI.

Montifringilla blanfordi Hume; Oates, Faun. Brit. Ind., Birds, ii. p. 245.

a, b, c. ♂ ♀ adult. Khamba Jong, 15,000 feet, Sept. 7–18, 1903.

Nos. 112, 1695, 1696. ♂ adult. Khamba Jong, 15,000 feet, Sept. 27, 1903. Bill dark bluish horn-coloured; feet black; iris reddish brown.

No. 129. ♂ adult. Khamba Jong, 15,000 feet, Oct. 4, 1903.

No. 1804. ♂ adult. Khamba Jong, 15,000 feet, Dec. 7, 1903.

Nos. 1866, 1875, 1884. ♂ adult; 1865, 1867. ♀ adult. Tuna, 15,000 feet, Feb. 3–22, 1904.

Blanford's Mountain-Finch occurred in large flocks on the hill-sides at Khamba Jong in the autumn. In the depth of winter this species and *M. ruficollis* were the most numerous birds at Tuna. Mixed flocks of them, numbering many hundreds, were to be seen every day, hunting for seeds in the bare fields. They ran swiftly and were very tame. Both when feeding on the ground and when flying they kept up a constant twitter. This bird avoids cultivation, and appears to breed at very high elevations. I saw none during the summer except a few near the top of the Karo La Pass in July.

55. MONTIFRINGILLA RUFICOLLIS.

Montifringilla ruficollis Blanf.; Oates, Faun. Brit. Ind., Birds, ii. p. 245.

No. 1861. ♂ adult. Phari, 14,500 feet, Jan. 27, 1904.

Nos. 1868, 1870, 1871, 1874, 1879, 1886. ♂ adult. Tuna, 15,000 feet, Feb. 3–23, 1904. Bill dark bluish slaty; feet black; iris orange-red.

No. 1898. ♂ adult. Tuna, 15,000 feet, March 16, 1904.

This bird occurred at the same places as *M. blanfordi* and in about equal numbers. It is remarkable that such large numbers of these Finches should be able, at such barren places as Tuna, to pick up enough food to enable them to keep fat and in good condition during the severest cold weather. Breeding seems to be over by the end of July, when I saw large flocks containing many young birds in the neighbourhood of the Yam Dok Cho Lake and of the Karo La and Khamba La Passes.

The Tibetan name is "Rib-che-kar-po," or "The White Hill-bird."

56. MONTIFRINGILLA ADAMSI.

Montifringilla adamsi Moore; Oates, Faun. Brit. Ind., Birds, ii. p. 246; Sharpe, Sci. Result. Yark. Miss., Aves, p. 30.

a, b. ♂ adult. Khamba Jong, 15,200 feet, Sept. 1903.

No. 1752. ♀ adult. Khamba Jong, 15,200 feet, Oct. 24, 1903.

Nos. 1794. ♀; 1796. ♂; 1797. ♂; 1798. ♀. Khamba Jong, 15,200 feet, Nov. 23, 25, 1903.

No. 1806. ♂ adult. Khamba Jong, 15,200 feet, Dec. 12, 1903.

Nos. 1893. ♂; 1894. ♀ adult. Tuna, 15,000 feet, March 5, 1904.

Nos. 1976, 1977. ♂ adult. Gyantse, 12,000 feet, July 9, 1904.

There were a few solitary birds of this species at Khamba

Jong at the end of October. A month later they became quite common near the village. Large flocks assembled and kept up a constant noisy twittering, settling frequently on the sides of rocky precipices. They were scarce at Tuna, and were only seen there after heavy falls of snow. In July and August they were very common in all the more barren and uncultivated tracts from the Karo La Pass onwards to Lhasa.

57. MONTIFRINGILLA MANDELLII.

Montifringilla mandellii Hume, Str. F. iv. p. 488 (1876); Sharpe, Cat. B. Brit. Mus. xii. p. 262 (1888); Oates, Faun. Brit. Ind., Birds, ii. p. 244.

No. 1859. ♂ adult. Phari, 14,500 feet, Jan. 27, 1904.

No. 1860. ♂ adult. ,, ,, ,, ,,

Nos. 1881, 1882. ♂ adult. Tuna, 15,000 feet, Feb. 14, 1904.

No. 1883. ♂ adult. Tuna, 15,000 feet, Feb. 19, 1904.

No. 1900. ♂ adult. ,, ,, March 22, 1904.

I first saw this species about Phari and the Tang La Pass in January at altitudes of from 15,000 to 16,000 feet; it is evidently a bird of the highest elevations. After very heavy falls of snow it used to appear about Tuna for a few days, but went away as soon as the snow melted. During the summer I observed it only on the highest passes. The Tibetan name is "Go-pang."

58. FRINGILLAUDA NEMORICOLA.

Fringillauda nemoricola Hodgs.; Oates, Faun. Brit. Ind., Birds, ii. p. 247.

No. 1729. ♂ immature. Khamba Jong, 15,200 feet, Oct. 7, 1903. Bill brownish horn-coloured; feet dark brown; iris brown.

I saw this bird only on one occasion at Khamba Jong, when I shot a specimen out of a small flock.

59. FRINGILLAUDA BRANDTI.

Fringillauda brandti (Bp.); Oates, Faun. Brit. Ind., Birds, ii. p. 248.

Montifringilla brandti Sharpe, Sci. Result. Yark. Miss., Aves, p. 33.

Leusticte brandti Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 128.

No. 1982. ♀ adult. Nagartse, 13,000 feet, July 20, 1904. Bill blackish horn-coloured; feet black; iris dark brown.

Small flocks of this Finch occurred about the Karo La Pass in July. As there were many quite young birds, it probably breeds in the neighbourhood.

60. Emberiza, sp. inc.

On several occasions at Lhasa I saw a Bunting with a streaked head, probably *E. stracheyi*. The only place where the bird occurred was on the hill on which the Dalai Lama's palace, the Potala, is situated. The Potala is inside the Ling Kor (the sacred road within the circle of which no life may be taken), so that it was impossible for me to shoot a specimen for identification.

61. Cotile riparia.

Cotile riparia (Linn.); Oates, Faun. Brit. Ind., Birds, ii. p. 272; Sharpe, Sci. Result. Yark. Miss., Aves, p. 106.

Nos. 1986, 1987. ♂ adult. Chaksam, Tsang Po (Brahmapoutra) River, 12,000 feet, July 27, 1904. Bill black; feet fleshy; iris dark brown.

No. 2029. ♀ adult. Lhasa, 12,200 feet, Aug. 31, 1904.

Sand-Martins were very common during the summer at all suitable places. They were especially numerous in the Tsang Po (Upper Brahmapoutra) Valley and along the Kyi Chi River as far as Lhasa. The nests contained young birds in July. The Tibetan name of this bird is "Kang-bor."

62. Cotile rupestris.

Ptyonoprogne rupestris (Scop.); Oates, Faun. Brit. Ind., Birds, ii. p. 274.

Cotile rupestris Sharpe, Sci. Result. Yark. Miss., Aves, p. 106.

No. 1717. ♂ adult. Khamba Jong, 15,200 feet, Oct. 4, 1903. Bill black; feet fleshy; iris dark brown.

No. 1975. ♂ adult. Gyantse, 12,000 feet, July 9, 1904.

During the summer this Crag-Martin is common throughout the whole of Southern Tibet. The latest date on which I saw it at Khamba Jong was October 4th. This species bred in large numbers on the side of the rock on which Gyantse Jong stands. The young birds were fully fledged at the end of June.

63. HIRUNDO DAURICA.

Hirundo daurica Linn.; Oates, Faun. Brit. Ind., Birds, ii. p. 282.

No. 1991. ♀ adult. Chaksam, Brahmapoutra (Tsang Po) River, 12,000 feet, July 30, 1904.

No. 2010. ♀ adult. Lhasa, 12,200 feet, Aug. 18, 1904. Bill black; feet purplish brown; iris dark brown.

Common at Gyantse, and especially so at Lhasa, during the summer. I did not procure any specimens at Khamba Jong, but I think that this was the species that occurred there up to the beginning of October. The Tibetans call the Swallow "Dag-che," *i. e.* "The bird that eats mud."

64. MOTACILLA ALBA.

Motacilla alba Linn.; Oates, Faun. Brit. Ind., Birds, ii. p. 287; Sharpe, Sci. Result. Yark. Miss., Aves, p. 56.

a. ♀ adult; *b.* ♂ adult; *c.* ♀ adult; No. 1701. ♂ adult. Khamba Jong, 15,200 feet, Sept. 1903.

No. 2047. ♀ adult. Lhasa, 12,200 feet. Sept. 18, 1904.

Tolerably common from the beginning of the summer up to the middle of October.

65. MOTACILLA LEUCOPSIS.

Motacilla leucopsis Gould; Oates, Faun. Brit. Ind., Birds, ii. p. 288; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 54.

No. 2030. ♂ adult. Lhasa, 12,200 feet, Sept. 2, 1904.

No. 2045. ♂ adult. " " Sept. 18, 1904.

There were a few birds of this species at Lhasa in the autumn. I did not notice it elsewhere.

66. MOTACILLA PERSONATA.

Motacilla personata Gould: Oates, Faun. Brit. Ind., Birds, ii. p. 290; Sharpe, Sci. Result. Yark. Miss., Aves, p. 56.

No. 1726. ♀ adult. Khamba Jong, 15,200 feet, Oct. 5, 1903.

No. 2048. ♀ adult. Lhasa, 12,200 feet, Sept. 18, 1904.

Occurred in small numbers all through the district.

67. MOTACILLA HODGSONI.

Motacilla hodgsoni Gray; Oates, Faun. Brit. Ind., Birds, ii. p. 291; Sharpe, Sci. Result. Yark. Miss., Aves, p. 57.

Nos. 1901. ♂ adult; 1902. ♀ adult. Tuna, 15,000 feet, March 25, 1904.

No. 1948. ♂ adult. Gyantse, 12,000 feet, May 1, 1904.

No. 1979. ♂ immature. Gyantse, 12,000 feet, July 9, 1904.

Nos. 1996. ♂ adult; 1997. ♀ adult. Chaksam, Brahmapoutra (Tsang Po) River, 12,000 feet, July 30, 1904.

Nos. 2007. ♂ immature; 2008. ♀ immature. Lhasa, 12,200 feet, Aug. 18, 1904.

No. 2046. ♀ adult. Lhasa, 12,200 feet, Sept. 18, 1904.

This Wagtail was rather common at Lingmathang, Chumbi Valley (11,000 feet), in January. I did not see it again until the end of March, when I shot a pair at Tuna. Throughout the summer it was very generally distributed. It has a very pleasant song. The Tibetan name is "Sa-po-dé-dé."

68. MOTACILLA CITREOLA.

Motacilla citreola Pall.; Oates, Faun. Brit. Ind., Birds, ii. p. 298; Sharpe, Sci. Result. Yark. Miss., Aves, p. 59.

Budytes citreola Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 53.

a. ♀ immature; *b.* ♂ adult; Nos. 105. ♂ adult; 106. ♀ adult; 1702. ♂ adult. Khamba Jong, 15,200 feet, Sept. 1903.

Nos. 1710. ♂ adult; 1713. ♀ adult. Khamba Jong, 15,200 feet, Oct. 1903.

No. 1981. ♀ adult. Nagartse, 13,000 feet, July 20, 1904.

No. 1994. ♀ adult. Chaksam, Brahmapoutra (Tsang Po) River, 12,000 feet, July 30, 1904.

Nos. 2001. ♀ adult; 2022. ♂ adult. Lhasa, 12,200 feet, Aug. 1904.

Nos. 2031. ♀; 2032. ♂; 2033. ♀; 2038. ♀; 2041. ♂; 2043. ♀. Lhasa, 12,200 feet, Sept. 1904.

A common bird everywhere. The Tibetan name of this species, which is applied also to *M. citreoloides*, is "Sab-de."

69. MOTACILLA CITREOLOIDES.

Motacilla citreoloides Hodgs.; Oates, Faun. Brit. Ind., Birds, ii. p. 299; Sharpe, Sci. Result. Yark. Miss., Aves, p. 60.

No. 1980. ♂ adult. Nagartse, 13,000 feet, July 20, 1904.

Nos. 1999, 2000. ♂ adult. Lhasa, 12,200 feet, Aug. 15, 1904.

No. 2006. ♂ adult. Lhasa, 12,200 feet, Aug. 16, 1904.

No. 2027. ♂ adult. „ „ Aug. 31, 1904.

The species is very generally distributed throughout Southern Tibet.

70. ANTHUS MACULATUS.

Anthus maculatus Hodgs.; Oates, Faun. Brit. Ind., Birds, ii. p. 304; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 52.

a. ♂ adult. Khamba Jong, 15,200 feet, Sept. 28, 1903.

Nos. 2055, 2057. ♀ adult. Lhasa, 12,200 feet, Sept. 21, 1904.

No. 2056. ♂ adult. Lhasa, 12,200 feet, Sept. 21, 1904. Bill dark brown, lower mandible fleshy; feet fleshy; iris dark brown.

I shot some of these Tree-Pipits in a plantation near Lhasa towards the end of September; there were also a few at Khamba Jong in the autumn. In both cases they were probably on migration, and I think it very unlikely that they breed in the region which we visited.

71. ANTHUS STRIOLATUS.

Anthus striolatus Blyth; Oates, Faun. Brit. Ind., Birds, ii. p. 308; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 53.

No. 1690. ♂ adult. Chengtong, Sikhim, 8000 feet, Sept. 16, 1903. Bill black, lower mandible fleshy; feet yellowish fleshy; iris dark brown.

No. 104. ♂ adult. Khamba Jong, 15,200 feet, Sept. 26, 1903.

No. 113. ♂ adult. Khamba Jong, 15,200 feet, Sept. 27, 1903. This is a well-marked xanthochroic variety.

No. 1699. ♀ adult. Khamba Jong, 15,200 feet, Sept. 27, 1903.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 28, 1903.

Blyth's Pipit occurred in small numbers at Khamba Jong at the end of September. I saw it nowhere else.

72. OTOCORYS ELWESI.

Otocorys elwesi Blanf.; Oates, Faun. Brit. Ind., Birds, ii. p. 321; Sharpe, Sci. Result. Yark. Miss., Aves, p. 50.

a, *b*. ♂ adult. Khamba Jong, 15,200 feet, Sept. 1903.

c. ♀ immature; *d*. ♂ immature. Khamba Jong, 15,200 feet, Sept. 1903.

No. 103. ♂ adult. Khamba Jong, 15,200 feet, Sept. 26, 1903. Bill black, base of lower mandible whitish horny: feet black; iris dark brown.

Nos. 1697, 1698. ♀ adult. Khamba Jong, 15,200 feet, Sept. 27, 1903.

No. 114. ♀ adult; *d*. ♂ adult; *e*. ♀ immature; 1703. ♂ adult: 1704. ♀ adult. Khamba Jong, 15,200 feet, Sept. 28, 1903.

No. 1706. ♂ adult. Khamba Jong, 15,200 feet, Sept. 29, 1903.

Nos. 1712. ♂ adult; 122. ♂ adult; 123. ♂ adult; 1738. ♂ adult; 141. ♀ adult. Khamba Jong, 15,200 feet, Oct. 3-7, 1903.

Nos. 1774. ♂ adult; 1775. ♀ adult. Khamba Jong, 15,200 feet, Nov. 10, 1903.

Nos. 1869. ♀ adult; 1873. ♂ adult. Khamba Jong, 15,200 feet, Feb. 5-7, 1904.

No. 1899. ♀ adult. Tuna, 15,000 feet, March 16, 1904.

This Shore-Lark was very common at all the higher elevations throughout the year. This species frequents the barren uplands, and was not seen at Gyantse or Lhasa. It runs very swiftly, and, both during flight and on alighting, utters loud whistling notes. It was always tame, and allowed me to approach to within a very short distance. During the winter at Tuna immense flocks slept on the open plain, each bird sheltered from the wind on the leeside of a small stone. Individuals were apparently breeding at the Karo La Pass in July. The black markings are very indistinct and brownish in the hen birds, which are much less numerous than the males. In both sexes, in winter, the "horns" are not at all conspicuous. The Tibetan name for this bird is "Bo-nak-ma" ("The bird with the black breast").

73. MELANOCORYPHA MAXIMA.

Melanocorypha maxima Gould; Oates, Faun. Brit. Ind., Birds, ii. p. 322.

a. ? sex. Khamba Jong, 15,200 feet, Sept. 1903.

b. ♂ adult. „ „ Sept. 6, 1903.

No. 1741. ♂ adult. Khamba Jong, 15,200 feet, Oct. 9, 1903. Bill whitish horny, culmen and tips dusky; feet black, mottled with dull reddish; iris dark brown.

No. 1742. ♂ immature. Khamba Jong, 15,200 feet, Oct. 9, 1903.

No. 1772. ♂ immature. Khamba Jong, 15,200 feet, Nov. 8, 1903.

No. 1887. ♂ adult. Tuna, 15,000 feet, Feb. 28, 1904.

No. 1889. ♀ adult. „ „ March 2, 1904.

Nos. 1890, 1891. ♂ adult. Tuna, 15,000 feet, March 2, 1904.

No. 1984. ♂ adult. Nagartse, 13,000 feet, July 20, 1904.

Most of these skins have the secondaries rather more widely tipped with white than the specimens in the British Museum.

This Lark is a bird of the highest altitudes. It was locally very common, occurring at Khamba Jong up to the beginning of December. I saw none at Tuna until the beginning of March, when considerable flocks arrived. They frequented the banks of a small stream, the water of which issued from springs in the hill-side at a sufficiently high temperature to preclude freezing. This bird has a loud and very melodious whistle. It did not occur at Gyantse or Lhasa, but was common, and probably breeding, along the Yam Dok Cho Lake in July.

74. ALAUDA JAPONICA INOPINATA.

Alauda japonica inopinata Bianchi, Ann. Mus. Zool. St. Petersburg, tome ix. (1904).

No. 1915. ♀ adult. Gyantse, 12,000 feet, April 20, 1904.
No. 1937. ♂ adult. ,, ,, April 27, 1904.
No. 1971. ♂ adult. ,, ,, June 30, 1904.
No. 2028. ♀ adult. Lhasa, 12,200 feet, Aug. 31, 1904.

A young bird, in full moult, from Khamba Jong (15,200 feet), where it was shot on Sept. 16th, 1903, is, in the opinion of Dr. Bianchi, probably to be referred to this species.

This is a much lighter-coloured bird than typical *A. arvensis* and is larger than *A. gulgula*. It is a common resident from the Gyantse plain to Lhasa, and occurs in very large numbers wherever there is cultivation. I found about a dozen nests at Gyantse in July. None contained more than three eggs. The Tibetan name is "Chok-mo."

75. CALANDRELLA BRACHYDACTYLA.

Calandrella brachydactyla (Leisl.); Oates, Faun. Brit. Ind., Birds, ii. p. 327; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 51.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 28, 1903.

A few individuals of this species visited Khamba Jong in the autumn, but it was much less common there than *C. tibetana.*

76. CALANDRELLA TIBETANA.

Calandrella tibetana Brooks; Oates, Faun. Brit. Ind., Birds, ii. p. 329; Sharpe, Sci. Result. Yark. Miss., Aves, p. 53.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 1903.

No. 118. ♀ adult. Khamba Jong, 15,200 feet, Sept. 29, 1903.

No. 1705. ♂ adult. Khamba Jong, 15,200 feet, Sept. 29, 1903.

No. 125. ♂ adult. Khamba Jong, 15,200 feet, Oct. 4, 1903. Bill brownish horny, culmen dusky; feet dusky brown; iris dark brown.

No. 135. ♂ adult. Khamba Jong, 15,200 feet, Oct. 5, 1903.

Nos. 143. ♀; 144. ♂; 1737. ♂; 1739. ♂. Khamba Jong, 15,200 feet, Oct. 7, 1903.

No. 1754. ♂. Khamba Jong, 15,200 feet, Oct. 26, 1903.

Very common indeed at Khamba Jong, in company with *Otocorys elwesi*, up to the end of October. It was absent during the winter and most of the summer, but there were a few at Lhasa at the beginning of August.

77. DENDROCOPUS DARJILENSIS.

Dendrocopus darjilensis (Blyth); Blanf., Faun. Brit. Ind., Birds, iii. p. 37.

No. 1827. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 22, 1903. Bill plumbeous horny, lower mandible slaty; feet dull olive-green; iris reddish brown.

Common in the lower parts of Sikhim.

78. IYNX TORQUILLA.

Iynx torquilla Linn.; Blanf., Faun. Brit. Ind., Birds, iii. p. 78; Sharpe, Sci. Result. Yark. Miss., Aves, p. 110; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 50.

No. 2015. ♀ adult. Lhasa, 12,200 feet, Aug. 24, 1904. Upper mandible dark brown, lower mandible pale fleshy; feet horny white; iris brown.

No. 2016. ♂ adult. Lhasa, 12,200 feet, Aug. 24, 1904.

No. 2037. ♂ adult. „ „ Sept. 3, 1904.

These skins agree with others from India in having the lower breast and abdomen barred, instead of marked with the sagittate spots usual in European birds.

The Wryneck was fairly common in a plantation at Lhasa at the end of August. I saw none at Gyantse, nor, indeed, anywhere else in Tibet. I shewed some skins to two Tibetans, who were residents of Lhasa, and who possessed some knowledge of the names and habits of the common species : they both said that they had never seen the bird before.

79. UPUPA EPOPS.

Upupa epops Linn. ; Blanf., Faun. Brit. Ind., Birds, iii. p. 159 ; Sharpe, Sci. Result. Yark. Miss., Aves, p. 111 ; Oust. N. Arch. Mus. (3) v. p. 139 ; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 46.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 16, 1903.

No. 110. ♂ adult. Khamba Jong, 15,200 feet, Sept. 26, 1903.

No. 1732. ♂ adult. Khamba Jong, 15,200 feet, Oct. 10, 1903.

No. 1921. ♂ adult. Gyantse, 12,000 feet, April 23, 1904.

No. 2003. ♂ adult. Lhasa, 12,200 feet, Aug. 15, 1904.

Common up to the middle of October at Khamba Jong: from April onwards there were large numbers at Gyantse and Lhasa. The Tibetan name is " Pu-pu-pu-shu."

80. CYPSELUS sp. inc.

A Swift, of which I omitted to obtain specimens, was common during the summer, especially in the Brahmapoutra Valley.

81. ASIO ACCIPITRINUS.

Asio accipitrinus (Pall.) ; Blanf., Faun. Brit. Ind., Birds, iii. p. 271.

a. ♀ adult. Khamba Jong, 15,200 feet, Oct. 20, 1903.

Rather common along a rocky range of hills near Khamba Jong in October and November. I did not see this Owl anywhere else.

82. BUBO IGNAVUS.

Bubo ignavus Forst. ; Blanf., Faun. Brit. Ind., Birds, iii. p. 284.

a. ♀ adult. Khamba Jong, 15,200 feet, July 21, 1903.

No. 2025. ♂ adult. Lhasa, 12,200 feet, Aug. 31, 1904.

Bill and claws black ; iris golden yellow.

These two skins both belong to the typical form, and not to *B. turcomanus.*

This fine bird occurred at Khamba Jong up to the end of October. There were a few individuals near Tuna during the winter, and several pairs at Lhasa. The Tibetan name is "Wook-pa."

83. ATHENE BACTRIANA.

Athene bactriana Blyth; Blanf., Faun. Brit. Ind., Birds, iii. p. 303.

Carine bactriana Sharpe, Sci. Result. Yark. Miss., Aves, p. 14.

No. 154. ♂ adult. Khamba Jong, 15,200 feet, Oct. 24, 1903. Bill yellowish white; soles of feet dull yellow, claws black; iris bright yellow.

No. 1872. ♂ adult. Tuna, 15,000 feet, Feb. 7, 1904.

In both of these specimens the wing-measurement is 7 inches: this is longer than that of the skins in the British Museum by about half an inch. The Tibetan birds are also in other respects somewhat larger than those procured elsewhere.

A few of these small Owls were observed at Khamba Jong and Tuna in the winter. They were quite diurnal in their habits, being commonly seen in the daytime, sitting on rocks and old ruins. One bird lived in a hole in the wall of a Tibetan house near Tuna; I frequently saw it sunning itself on the roof in February, when the weather was extremely cold.

84. GYPS HIMALAYENSIS.

Gyps himalayensis Hume; Blanf., Faun. Brit. Ind., Birds, iii. p. 321.

Common along all the mountain-ranges. Many Vultures frequented our camp at Tuna in winter and fed on the carcases of mules and ponies; the carcases were frozen so hard that the Vultures had considerable difficulty in making any impression upon them. They collected with startling rapidity round the bodies of recently shot gazelles and other animals. I did not preserve any specimens.

+ 85. GYPAËTUS BARBATUS.

Gypaëtus barbatus (Linn.); Blanf., Faun. Brit. Ind., Birds, iii. p. 328; Sharpe, Sci. Result. Yark. Miss., Aves, p. 6; Oustalet, N. Arch. Mus. (3) v. p. 122.

No. 119. ♂ adult. Khamba Jong, 15,200 feet, Sept. 29, 1903.

a. ♂ adult. Khamba Jong, 15,200 feet, Oct. 3, 1903.

The Lämmergeyer is one of the commonest birds in Southern Tibet. There were large numbers, in all stages of maturity, at every camping-place, and they were exceedingly tame. I had excellent opportunities of observing this species and never saw it feed on anything else than carrion or the refuse thrown out from the camp. Unlike the Griffon Vultures, the Lämmergeyer usually soars at a low elevation, in spite of the magnificent power of flight that it possesses. On the ground it is a grotesquely clumsy object, and the weak, querulous cry does not conduce to dignity.

86. HALIAËTUS LEUCORYPHUS.

Haliaëtus leucoryphus (Pall.); Blanf., Faun. Brit. Ind., Birds, iii. p. 366; Sharpe, Sci. Result. Yark. Miss., Aves, p. 8.

This Eagle was common on the Yam Dok Cho and other large lakes. It also occurred during the winter, in moderate numbers, at Tuna, and was often seen at Lhasa. Although I was unable to shoot any specimens, I saw the bird so often, and at such close quarters, that I have no doubt of its correct identification.

+ 87. MILVUS MELANOTIS.

Milvus melanotis Temm. & Schl.; Blanf., Faun. Brit. Ind., Birds, iii. p. 377; Sharpe, Sci. Result. Yark. Miss., Aves, p. 8; Oust. N. Arch. Mus. (3) v. p. 130; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 41.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 11, 1903.
b. ♀ adult. ,, ,, ,, Sept. 13, 1903.
No. 1965. ♂ adult. Gyantse, 12,000 feet, May 23, 1904.

Extremely common throughout the country that we visited, and as bold and familiar as *M. govinda* is in the plains of

India. At all seasons of the year Kites abounded round our camps. Incubation began at Gyantse about the beginning of May. The nest is the usual untidy affair, decorated with rags, paper, and other rubbish. The young birds in a nest in our garden at Gyantse were so clamorous for food that they became a positive nuisance. The parents were quite undismayed by the daily whistling of jingal bullets through the branches of the tree on which the nest was built.

88. ACCIPITER NISUS.

Accipiter nisus (Linn.); Blanf., Faun. Brit. Ind., Birds, iii. p. 402; Sharpe, Sci. Result. Yark. Miss., Aves, p. 5; Oust. N. Arch. Mus. (3) v. p. 128; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 30.

No. 1939. ♂ adult. Gyantse, 12,000 feet, April 28, 1904.

The Sparrow-Hawk is tolerably common in summer in all the more fertile valleys.

89. FALCO SUBBUTEO.

Falco subbuteo Linn.; Blanf., Faun. Brit. Ind., Birds, iii. p. 422; Sharpe, Sci. Result. Yark. Miss., Aves, p. 10.

No. 1962. ♀. Gyantse, 12,000 feet, May 4, 1904.

I saw several Hobbies at Gyantse in the spring; but, as I did not notice the bird anywhere else later in the year, Is uspect that it does not breed in S. Tibet.

90. FALCO ÆSALON.

Æsalon regulus (Pall.); Blanf., Faun. Brit. Ind., Birds, iii. p. 426; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 42.

Falco regulus Sharpe, Sci. Result. Yark. Miss., Aves, p. 10.

No. 2059. ♂ adult. Gyantse, 12,000 feet, Oct. 5, 1904.

The specimen shot at Gyantse was the only Merlin that I saw in Tibet.

91. TINNUNCULUS ALAUDARIUS.

Tinnunculus alaudarius (Gm.); Blanf., Faun. Brit. Ind., Birds, iii. p. 428.

Cerchneis tinnunculus (Linn.); Sharpe, Sci. Result. Yark. Miss., Aves, p. 12; Oust. N. Arch. Mus. (3) v. p. 127.

a. ♀ adult. Khamba Jong, 15,200 feet, Sept. 15, 1903.

No. 1959. ♂ adult. Gyantse, 12,000 feet, May 3, 1904.

All through the winter there were a few Kestrels at Khamba Jong and Tuna, but most of those that occur in Tibet are probably summer migrants. At that season of the year they abound everywhere. The Tibetans call the bird "Tra," but I fancy that this is a term used indiscriminately for many of the Falconidæ.

+ 92. COLUMBA RUPESTRIS.

Columba rupestris Pall.; Blanf., Faun. Brit. Ind., Birds, iv. p. 30; Sharpe, Sci. Result. Yark. Miss., Aves, p. 116; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 26.

a. ♂ adult. Khamba Jong, 15,200 feet, Sept. 1903.

b. ♂ adult. „ „ Sept. 3, 1903.

No. 1730. ♀ adult. Khamba Jong, 15,200 feet, Oct. 7, 1903.

No. 1758. ♀ adult. Khamba Jong, 15,200 feet, Nov. 4, 1903.

No. 1878. ♀ adult. Tuna, 15,000 feet, Feb. 13, 1904.

Very common everywhere, both on the wind-swept wastes of Tuna and in the fertile valleys of Gyantse and Lhasa. Although, so far as I know, these Pigeons are not considered in any way sacred, they are fed to some extent by the occupants of the monasteries. Indeed, in most places, they are almost as tame as domesticated birds. They breed about rocky precipices, the numerous small caves in which are plentifully white-washed with the birds' excrement. Large flocks collect in the barley-fields after the crops have been harvested.

This was the only Pigeon seen in Tibet proper, though *C. leuconota* was common in the Chumbi Valley, at lower elevations than those inhabited by *C. rupestris*.

93. COLUMBA LEUCONOTA.

Columba leuconota Vig.; Blanf., Faun. Brit. Ind., Birds, iv. p. 32; Sharpe, Sci. Result. Yark. Miss., Aves, p. 116.

Snow-Pigeons were in large flocks in the Chumbi Valley in January; the bird does not appear to occur in the country north of the Himalayan Passes.

94. DENDROTRERON HODGSONI.

Dendrotreron hodgsoni (Vig.); Blanf., Faun. Brit. Ind., Birds, iv. p. 33.

Alsocomus hodgsonii Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 26.

No. 1828. ♂ adult. Lamteng, Sikhim, 9000 feet, Dec. 23, 1903. Bill dark purple; feet dark greenish, claws bright yellow; iris hoary white.

No. 1829. ♀ adult. Lamteng, Sikhim, 9000 feet, Dec. 23, 1903.

These specimens were shot out of a large flock on some high trees in dense forest.

95. TURTUR ORIENTALIS.

Turtur orientalis (Lath.); Blanf., Faun. Brit. Ind., Birds, iv. p. 40; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 27.

No. 1923. ♀ adult. Gyantse, 12,000 feet, April 23, 1904.
No. 1940. ♂ adult. „ „ April 28, 1904.

A very common bird at Gyantse. The native name, an excellent onomatopœic rendering of its note, is "Di-di-ku-ku."

96. TURTUR LHASÆ.

Turtur lhasæ Walton, Bull. Brit. Orn. Club, xv. p. 92 (1905).

No. 2023. ♂ adult. Lhasa, 12,200 feet, Aug. 30, 1904.

I was so much occupied with other work at Lhasa that I had no time to examine my birds critically, and did not notice that this Dove was distinct from *T. orientalis*. It was quite common in all the plantations near the city. At the house of the Astrologer near Lhasa I noticed a pair in a cage, and it is commonly kept in captivity by the Tibetans.

97. SYRRHAPTES TIBETANUS.

Syrrhaptes tibetanus Gould; Blanf., Faun. Brit. Ind., Birds. iv. p. 63; Sharpe, Sci. Result. Yark. Miss., Aves, p. 119.

No. 120. ♂ adult. Khamba Jong, 15,200 feet, Oct. 1, 1903. Bill and claws bluish plumbeous; iris dark brown.

No. 121. ♂ immature. Khamba Jong, 15,200 feet, Oct. 1, 1903.

No. 1707. ♂ adult. Khamba Jong, 15,200 feet, Oct. 1, 1903.

The Tibetan Sand-Grouse is rather locally distributed. It was common at Khamba Jong, but less so at several places between Tuna and Gyantse. It generally occurred in parties of from three to eight individuals. I found it not at all wild, and usually flushed the covey at a distance of from eight to a dozen yards. The birds have a loud dissyllabic call-note, which they utter constantly during flight.

98. Lophophorus refulgens.

Lophophorus refulgens Temm.; Blanf., Faun. Brit. Ind., Birds, iv. p. 96.

Common in wooded parts of the Chumbi Valley; many specimens passed through my hands, but as the means of transport at my disposal were extremely limited, I did not preserve any skins.

99. Tragopan satyra.

Tragopan satyra (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 99.

I heard of several specimens being shot in the Chumbi Valley, but did not see the bird myself.

100. Ithagenes cruentus.

Ithagenes cruentus (Hardw.); Blanf., Faun. Brit. Ind., Birds, iv. p. 103.

No. 1692. ♂ adult. Tangu, Sikhim, 13,000 feet, Sept. 21, 1903. Bill black; tips, edges, and skin round nostrils light red; feet vermilion, claws brown; iris dark brown, orbital skin light red.

No. 1693. ♀ adult. Tangu, Sikhim, 13,000 feet, Sept. 21, 1903. Bill black, skin round nostrils black.

Very common in the Chumbi Valley, but not elsewhere in the district visited by the Tibet Frontier Commission.

It occurred in large numbers up to the highest tree-level during the winter, especially in rhododendron scrub. Until it had been much shot at it was surprisingly bold, but was such a confirmed "runner" that it did not afford much sport.

101. PERDIX HODGSONIÆ.

Perdix hodgsoniæ (Hodgs.); Blanf., Faun. Brit. Ind., Birds, iv. p. 142.

a. ♂ adult. Khamba Jong, 15,200 feet, Aug. 29, 1903.

b. ? sex, immature. Khamba Jong, 15,200 feet, Sept. 1903.

Nos. 116. ♂ adult; 117. ♀ adult. Khamba Jong, 15,200 feet, Sept. 29, 1903.

Nos. 1708. ♀ immature; 1709. ♀ adult. Khamba Jong, 15,200 feet, Oct. 1, 1903.

Nos. 130. ♂ adult; 1721. ♂ adult. Khamba Jong, 15,200 feet, Oct. 5, 1903.

Nos. 139. ♀ adult; 1727. ♂ adult; 1728. ♀ adult. Khamba Jong, 15,200 feet, Oct. 7, 1903.

Nos. 1787. ♂ adult; 1788. ♀ adult; 1789. ♂ adult. Khamba Jong, 15,200 feet, Nov. 23, 1903.

No. 1904. ♂ adult. Gyantse, 12,000 feet, April 19, 1904. Bill greenish horny; feet whitish horny; iris pale brown; orbital skin brick-red.

Coveys of from ten to twenty were very common at Khamba Jong during the winter. They kept up an almost continuous "cheep" when on the ground, and were most confirmed "runners." On one occasion I fired four or five shots, at very close range, at a small party that came down to drink at a stream: even then they would not take to wing, and the survivors ran up the steep hill. These Partridges were very plentiful on the road between Tuna and Gyantse in April. They probably breed in May and June.

102. TETRAOGALLUS TIBETANUS.

Tetraogallus tibetanus (Gould; Blanf., Faun. Brit. Ind., Birds, iv. p. 144; Sharpe, Sci. Result. Yark. Miss., Aves, p. 123; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 14.

a, b. ? sex. Khamba Jong, 15,200 feet, Sept. 1903.

c. ♂ adult; *d.* ♀ adult. Khamba Jong, 15,200 feet, Sept. 3, 1903.

No. 115. ♂ adult. Khamba Jong, 15,200 feet, Sept. 29, 1903. Bill pale orange; feet orange-red, claws reddish horny; iris dark brown, orbital skin orange.

No. 1803. ♀ adult. Khamba Jong, 15,200 feet, Dec. 12, 1903.

Nos. 1895. ♂ adult; 1896. ♀ adult. Tuna, 15,000 feet, March 3, 1904.

Throughout the whole of Southern Tibet, wherever there are high bare mountains at all seasons of the year, the loud notes of the Snow-Cock are heard. The birds never descend to the plains, but keep to the hill-sides. In winter they are found in flocks of from ten to thirty; they do not take to the wing readily, but, once flushed, travel a long distance before alighting again. By the end of February they are in pairs. They are excellent birds for the table, the dark flesh resembling that of the Grouse.

103. LERWA NIVICOLA.

Lerwa nivicola (Hodgs.); Blanf., Faun. Brit. Ind., Birds, iv. p. 145; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 14.

No. 1903. ♀ adult. Tuna, 15,000 feet, March 28, 1904. Bill bright red; feet orange-red.

I did not see any Snow-Partridges myself, but some were procured by a native surveyor on the slopes of Chumolarhi, and others, I believe, were shot near Phari, in the Chumbi Valley.

104. GALLINULA CHLOROPUS.

Gallinula chloropus (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 175; Sharpe, Sci. Result. Yark. Miss., Aves, p. 146; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 6.

Nos. 2004. ♀ immature; 2005. ♂ immature. Lhasa, 12,200 feet, Aug. 16, 1904.

No. 2006. ♂ adult. Lhasa, 12,200 feet, Aug. 31, 1904.

Moorhens are very common and breed in the extensive marshes at Lhasa. The Tibetans call this bird "Ti-rig," and say that it is a resident species, though it does not occur elsewhere than at Lhasa in the country that we visited.

105. Fulica atra.

Fulica atra Linn.; Blanf., Faun. Brit. Ind., Birds, iv. p. 180; Sharpe, Sci. Result. Yark. Miss., Aves, p. 145; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 6.

Coots abound in the marshes at Lhasa, but were not seen anywhere else. I shot two or three, but have mislaid the skins.

106. Grus nigricollis.

Grus nigricollis Przew. in Rowley's Orn. Misc. ii. p. 436, pl. ix. (1877); Sharpe, Cat. B. Brit. Mus. xxiii. p. 258 (1894).

No. 2039. Lhasa, 12,200 feet, Sept. 3, 1904.

The head and neck only were preserved, and the sex was not determined; the bird appeared to be a young adult. Bill greenish horny; feet black; iris pale yellow.

This Crane is fairly common at Gyantse and Lhasa, especially at the latter place. It probably breeds at Lhasa, as I saw a very young bird there at the beginning of August. The loud cry of this species is very like that of the Sarus (*G. antigone*). At Gyantse the Cranes were very wild, and I tried in vain to procure a specimen, but they were much tamer at Lhasa.

107. Charadrius fulvus.

Charadrius fulvus Gm.; Blanf., Faun. Brit. Ind., Birds, iv. p. 234; Sharpe, Sci. Result. Yark. Miss., Aves, p. 136.

No. 2044. ♂. Lhasa, 12,200 feet, Sept. 13, 1904.

I shot the only Golden Plover that I saw in Tibet at Lhasa in September. There were none, I think, at Khamba Jong during the autumn migration the year before.

108. Ibidorhynchus struthersi.

Ibidorhynchus struthersi Vig.; Blanf., Faun. Brit. Ind., Birds, iv. p. 249; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 4.

Nos. 1846. ♀ adult; 1847. ♂ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 16, 1904.

No. 1967. ♂ adult. Gyantse, 12,000 feet, June 22, 1904.

Common during the summer on all the streams, from Gyantse almost to Lhasa. The birds frequent shingly beaches; they are not very active, and remain motionless for long periods by the edge of the water. The general effect of their plumage harmonizes very closely with their surroundings and renders them difficult to detect. When flushed, they fly slowly, with an undulating flight, uttering loud Plover-like cries. By May they are found in pairs, but they appear to be late breeders. The reproductive organs of a male bird shot at Gyantse on June 22nd were very little developed. The birds—both sexes, I believe—frequently sit in "sham nests," small depressions which they scratch out among the pebbles. I noticed this habit in a pair at Gyantse at the beginning of May, and I thought at first that the hen was going to lay eggs. I kept this pair under observation until the beginning of July: by that time there were about a dozen of these depressions on the small island that the birds frequented, but I am almost certain that there were no eggs.

I saw four or five Ibis-bills in January at Lingmathang, an open plain in the Chumbi Valley at an altitude of about 12,000 feet. They spent the middle of the day dozing on the banks of a small river, but became more lively towards the evening, when I found them running about and feeding on the open grass-land a hundred yards or more away from the water, and frequently uttering a loud, melodious, whistling note, quite different from their harsh alarm-notes.

109. Totanus calidris.

Totanus calidris (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 264; Sharpe, Sci. Result. Yark. Miss., Aves, p. 140; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 4.

a. ♀. Khamba Jong, 15,200 feet, Sept. 14, 1903.

No. 2009. ♂. Lhasa, 12,200 feet, Aug. 18, 1904.

No. 2014. ♂. " " Aug. 21, 1904.

Redshanks were seen in considerable numbers at Khamba Jong up to the end of October; they were especially numerous at some hot springs a few miles from our camp. After the autumn, none were observed until we reached the Yam Dok Cho Lake, towards the end of July. Here they were fairly numerous, and they occurred in very large numbers on the Lhasa plain in August and September, many frequenting marshy meadows in the town itself. The Tibetan name of the bird is "Chhu-ring," *i.e.* Long-bill.

110. PAVONCELLA PUGNAX.

Pavoncella pugnax (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 268.

Machetes pugnax Sharpe, Sci. Result. Yark. Miss., Aves, p. 142.

No. 2049. ♂. Lhasa, 12,200 feet, Sept. 20, 1904.

I shot one Ruff, and saw a few others, at Lhasa about the middle of September; they were, no doubt, migrating.

111. GALLINAGO STENURA.

Gallinago stenura (Kuhl); Blanf., Faun. Brit. Ind., Birds, iv. p. 289; Sharpe, Sci. Result. Yark. Miss., Aves, p. 144.

No. 2040. ♀. Lhasa, 12,200 feet, Sept. 3, 1904.

The Pintail Snipe occurred in very small numbers at Lhasa in the autumn; it was not nearly so common as the Solitary Snipe, nor did I see it anywhere else than at Lhasa.

112. GALLINAGO SOLITARIA.

Gallinago solitaria Hodgs.; Blanf., Faun. Brit. Ind., Birds, iv. p. 290; Sharpe, Sci. Result. Yark. Miss., Aves, p. 144.

No. 1740. ♀. Khamba Jong, 15,200 feet, Oct. 9, 1903.
No. 1768. ♂. " " Nov. 6, 1903.
No. 1800. ♀. " " Nov. 28, 1903.
No. 1810. ♀. Lamteng, Sikhim, 9000 feet, Dec. 19, 1903.
No. 1818. ♂. Lamteng, Sikhim, 9000 feet, Dec. 21, 1903.

Solitary Snipe occurred in moderate numbers at Khamba

Jong up to the end of November, and in somewhat larger numbers at Lhasa in August and September: still they were nowhere really common. The bird has a slow straight flight. If fired at and missed, it usually settles again within a hundred yards or so, and is a very easy bird to procure.

† 113. LARUS BRUNNEICEPHALUS.

Either this species or *L. ridibundus* was very common on the Yam Dok Cho Lake in July; but when I returned at the end of September the Gulls had all gone. Shooting was prohibited, and I was unable to obtain a specimen.

114. STERNA FLUVIATILIS.

Sterna fluviatilis Naumann; Blanf., Faun. Brit. Ind., Birds, iv. p. 318.

a. ♂ immature. Khamba Jong, 15,200 feet, Sept. 7, 1903.

No. 1956. ♀ adult. Gyantse, 12,000 feet, May 3, 1904.

In the autumn there were a good many of these Terns on a small river near Khamba Jong, and they were very common on all the streams and lakes during the summer. The earliest date in spring on which I saw this species at Gyantse was May 3rd. The Tibetan name for the bird is "Ka-ka-ma."

115. PHALACROCORAX CARBO.

Phalacrocorax carbo (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 340.

There were a few Cormorants on the Tsang Po and Kyi Chu Rivers, right up to Lhasa, in August and September. I did not procure a specimen, but saw the bird often enough, and at sufficiently close quarters, to identify it.

116. ANSER INDICUS.

Anser indicus (Lath.); Blanf., Faun. Brit. Ind., Birds, iv. p. 419; Sharpe, Sci. Result. Yark. Miss., Aves, p. 128.

The Bar-headed Goose was the only Goose that I saw in Tibet. It was very common on the Kala Tso and Hram (Bam) Tso Lakes, a few miles from Tuna, from March onwards, and a good many apparently spent the whole winter there, as they were constantly seen by our Mounted Infantry patrols in February. The Geese breed on these and many other lakes, according to Tibetan accounts, but I had no opportunity of seeing their nests. There were some eggs for sale in the Lhasa bazaar, which probably belonged to this species. When we arrived at Gyantse, in April, there were very large numbers of Geese there and they were so tame that we shot a good many. They had all left the Gyantse plain by the middle of May.

117. CASARCA RUTILA.

Casarca rutila (Pall.); Blanf., Faun. Brit. Ind., Birds, iv. p. 428; Sharpe, Sci. Result. Yark. Miss., Aves, p. 128; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 6.

a. ? sex. Khamba Jong, 15,200 feet, Sept. 1903.

No. 1897. ♂ adult. Tuna, 15,000 feet, March 3, 1904.

A very common resident and breeding species. I saw Ruddy Sheldrakes all through the winter, but their numbers were much increased in the spring. There were very many pairs of these birds along the road from Tuna to Gyantse, and at Gyantse itself they swarmed. They bred in the holes in the river-banks or in the ditches between the fields; the young were hatched by the end of May. Both adults and young were surprisingly tame—indeed, almost ludicrously so. Until they had been shot at they were extremely reluctant to take to flight, and would merely waddle a few yards out of the way. To those who are familiar with the wariness of this Duck in India, the fearlessness of the Tibetan birds seems extraordinary.

118. ANAS BOSCAS.

Anas boscas Linn.; Blanf., Faun. Brit. Ind., Birds, iv. p. 435; Sharpe, Sci. Result. Yark. Miss., Aves, p. 130; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 6.

The Mallard was common on the lakes and rivers at the end of March and during April; also at Lhasa in August and September. Possibly a few pairs breed on the larger lakes, but Tibetan accounts on this point were conflicting.

119. NETTIUM CRECCA.

Nettium crecca (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 443.

Querquedula crecca Sharpe, Sci. Result. Yark. Miss., Aves, p. 130; Berez. & Bianchi, Aves Exped. Potan. Gan-su, p. 6.

No. 138. ♀ adult. Khamba Jong, 15,200 feet, Oct. 6, 1903.

Common in spring and autumn, especially at Lhasa; but I do not think that it breeds in S. Tibet.

120. MARECA PENELOPE.

Mareca penelope (Gm.); Blanf., Faun. Brit. Ind., Birds, iv. p. 445.

I saw a few Wigeon on the Kala Tso Lake in the spring.

121. DAFILA ACUTA.

Dafila acuta (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 447; Sharpe, Sci. Result. Yark. Miss., Aves, p. 131.

Common on the lakes in April.

122. QUERQUEDULA CIRCIA.

Querquedula circia (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 449; Sharpe, Sci. Result. Yark. Miss., Aves, p. 131.

No. 137. ♂ adult. Khamba Jong, 15,200 feet, Oct. 6, 1903.

No. 2042. ♂ adult. Lhasa, Sept. 8, 1904.

I only noticed the Garganey at Lhasa in the autumn; it was quite common there.

123. SPATULA CLYPEATA.

Spatula clypeata (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 452; Sharpe, Sci. Result. Yark. Miss., Aves, p. 132.

There were a few Shovelers on the Kala Tso Lake in April. I found one frozen into the ice, but the skin was too much damaged for preservation.

124. NYROCA FERRUGINEA.

Nyroca ferruginea (Gm.); Blanf., Faun. Brit. Ind., Birds, iv. p. 460; Sharpe, Sci. Result. Yark. Miss., Aves, p. 132.

No. 1786. ♀ adult. Khamba Jong, 15,200 feet, Nov. 20, 1903.

No. 2012. ♂ adult. Lhasa, 12,200 feet, Aug. 19, 1904.

No. 2013. ♀ adult. „ „ „ „

The White-eyed Pochard was quite the most abundant Duck in Southern Tibet; it occurred at Khamba Jong up to the end of November, was exceedingly common on the lakes in the spring, and far outnumbered the other Ducks at Lhasa in August and September. It certainly breeds at Lhasa, as a "flapper," unable to fly, was shot there at the end of August. The Tibetan name is "Chhu-cha," *i. e.* Water-bird. Although other members of the Commission besides myself shot many Pochards, and although I inspected a very large number of birds through field-glasses, I saw no specimens of *N. baeri* anywhere in Tibet.

125. MERGANSER CASTOR.

Merganser castor (Linn.); Blanf., Faun. Brit. Ind., Birds, iv. p. 469.

No. 1848. ♂ adult. Gauthong, Chumbi Valley, 12,000 feet, Jan. 16, 1904.

The Goosander is a resident species in South Tibet. I saw and shot birds in the Chumbi Valley in January, and they were fairly plentiful throughout the country from Tuna to Lhasa. A few nested in the Gyantse plain. They paired about the middle of April, when it was a common sight to see them chasing one another, both sexes swimming very rapidly with their bodies almost completely submerged.

126. PODICIPES sp. inc.

A large Crested Grebe (probably *P. cristatus*) was common on the Yam Dok Cho Lake (Lake Palti) in July. Owing to the prohibition of shooting at the time, I was unable to obtain a specimen, but have little doubt about the identification.

A Little Grebe (probably *P. fluviatilis*) occurred rather plentifully at Lhasa: I omitted to obtain any specimens.

XIV.—*Notes on the Nidification of Indian Birds not mentioned in Hume's 'Nests and Eggs.'*—Part II. By E. C. STUART BAKER, F.Z.S.

[Concluded from p. 113.]

DICRURUS ANNECTENS.

Oates, F. B. Ind. i. p. 312.

I have nothing to add to my description of the nesting of this King-Crow, which is met with in our district in some numbers throughout the breeding-season; but we have found a certain type of egg to be singularly dominant here, and as it is one which seems different to that laid by the other species of the genus, it deserves notice.

The normal egg laid by the members of the genus *Dicrurus* is a broad regular oval, not much compressed towards the smaller end, and marked with spots, the most prominent character of which is their roundness. The majority of eggs of the Crow-billed Drongo, as taken in Lakhimpur, are, on the contrary, long ovals, well drawn out and often conspicuously pointed at the small end, whilst the markings convey the idea of having been laid on in longitudinal splashes.

The colour of these eggs varies considerably: in some the ground-colour is white, or white with a faint creamy tinge, and the marks consist of spots and blotches of deep purple-red or blood-red, with others underlying them of dark reddish lavender. In this type of coloration the marks are generally sparing everywhere, but less so at the larger end. Another common type is of a comparatively dark brick-red pink, profusely covered with small and large longitudinal blotches of brick-red and red-brown and the usual underlying pale lavender spots. Yet a third type has the ground bright dark salmon-pink, with bold longitudinal blotches of red-brown and lavender, sometimes dense everywhere, sometimes less numerous and shewing up the more boldly. In the majority of eggs, however, the markings, though more numerous towards the larger end, form no cap or ring there.

My eggs taken in Lakhimpur are on average a good deal larger than those taken in North Cachar, being about 1·05 by ·75 in.

96. DICRURUS NIGRESCENS.

Oates, F B. Ind. i. p. 315.

Dr. Ernst Hartert, after a comparison of the Ashy Drongo of Eastern Assam with the types of various species, has come to the conclusion that our bird is *D. nigrescens* and not *D. cineraceus* as determined by Oates.

This species breeds fairly freely throughout the Province, though not so common a bird as the Common Indian Ashy Drongo is within its own limits.

I can see no points of difference in the breeding of *D. nigrescens* and *D. longicaudatus* either as regards nests or eggs, nor do I think that they could in any way be discriminated one from the other. On the whole, the eggs of *D. nigrescens* may be more richly and darker coloured than those of *D. longicaudatus*, eggs with a white ground being uncommon.

It breeds throughout April, May, June, and July, and I believe that Dr. Coltart has taken eggs in March. It seems to prefer the plains near to the foot of the hills for nesting purposes, and is seldom to be found during the breeding-season far from them.

The number of eggs laid by *D. nigrescens* is quite as often three as four, although *D. longicaudatus* seems generally to lay the latter number.

97. PHYLLOSCOPUS AFFINIS.

Oates, F. B. Ind. i. p. 401; Osmaston, B. N. H. S. J. xi. p. 68.

Although this little Warbler is exceedingly common in certain localities in Kashmir above 10,000 feet, its nest for long escaped observation. Mr. B. B. Osmaston, of the Forest Department, was the first collector to take it in the Tons Valley; he records *loc. cit.*:—“On June the 7th (1896) I noticed a small greenish-yellow bird frequenting the low scrub on the mountain side at about 12,000 feet elevation. This scrub consists chiefly of dwarf juniper, *Lonicèra,* and a small yellow-flowering rhododendron which grows only two or three feet high. There are few trees, except here and there a birch, and the bird keeps chiefly to the low scrub. It has a rather loud monosyllabic chirp, which it frequently utters. After a considerable search I was rewarded by finding two nests of this species, both in the above-described scrub and raised about one foot from the ground. The nests were domed, with a small side entrance, and were made of grass and lined with feathers.

"The eggs were four in each nest, very broad ovals, either pure white or white with a few very pale pink spots. They gave the following measurements :—

"Largest egg	·61 by ·48 in.
Smallest egg	·56 by ·46 in.
Average of 8 eggs	·60 by ·47 in."

Since this was written nests and eggs have been taken by numerous collectors, who have confirmed what was written by Osmaston. The majority of the eggs are, perhaps, pure white, but many have specks and spots of red, as a rule very sparsely scattered over the larger end and very pale, but sometimes fairly distinct and plentiful.

Mr. S. L. Whymper writes to me from Kashmir, 1200 feet :—"This is a most common nest up here and I have taken numbers. The birds generally seem to lay four eggs, three pure white and the fourth faintly speckled with red ; I have, however, found one clutch of four in which all were spotted."

I have had clutches of four sent me which were all pure white ; on the other hand, I have seen clutches all spotted, and some again containing eggs of both kinds, so that there would seem to be no certainty as to what may be expected.

The eggs in my collection vary between ·54 by ·60 in. in length and between ·45 by ·48 in. in breadth.

Typically they are broad ovals, distinctly pointed at the smaller end, though occasionally quite obtuse. The grain is very fine and close, and there is an appreciable amount of gloss on the shell, which is stout for so tiny an egg.

The birds seem to lay from the beginning of June to late in August, and the full complement of eggs is four.

98. ACANTHOPNEUSTE MAGNIROSTRIS.

Oates, F. B. Ind. i. p. 415; Buchanan, B. N. H. S. J. xii. p. 777; Whymper, ibid. xv. p. 521.

The Large-billed Willow-Warbler had long been known to breed in Kashmir, but it was not until 1899 that its nest was taken. In that year Major Buchanan sent a bird for my identification which he had shot off its nest and which proved to be of this species. The nest was taken at Changla Gali, about ten miles from Murree, at an elevation of some 8500 feet.

Buchanan thus describes the nest:—"The female was shot off the nest, which was a large, loosely-made, domed structure of moss and maiden-hair stems, lined with fine grass. It was situated under an overhanging bank, on the side of a steep, wooded hill, supported by the projecting root of a tree. The nest contained four fresh pure white eggs, average length ·72 and breadth ·51 inch."

Mr. S. L. Whymper, in another number of the same journal, also records his experience. The first nest taken by him "was entirely of moss with a very slight lining of hair and domed, although placed well inside a hole in a tree, about ten feet up. There were four fresh eggs, pure white." Afterwards he found two more nests in precisely similar positions.

Rattray, Ward, and others have also taken the nests of this Warbler. It seems to be always made mainly of moss, but sometimes to have fern-roots and maiden-hair stems mixed with it. The lining may be of fine grasses, fern-roots, or hair, but I have never heard of a lining of feathers. The normal complement of eggs is four, but rarely five are laid. They are always pure white with a high gloss. The shell is stout and fine-grained. In shape the eggs are broad ovals, not much compressed towards the smaller end, but in a few cases some of mine are rather lengthened and pointed.

My eggs average ·71 in. by ·54, and vary between ·68 by ·74 in length and between ·52 and ·57 in breadth.

99. CRYPTOLOPHA AFFINIS.

Oates, F. B. Ind. i. p. 422.

I have seen but one nest and eggs of this little Warbler, which I owe to the generosity of Dr. Coltart. The nest was one brought in to him by Nagas from the foot-hills above Margherita just outside the borders of the extreme east of Assam. It was of the usual type of Flycatcher-Warbler's nests—that is to say, it was made of moss and very thickly lined with Bombax-cotton. It was, of course, globular in shape, and had an entrance high up on one side, and measured, roughly speaking, about six inches high by four inches broad.

The eggs were five in number, and were, as might be expected, pure white, less glossy than those of *C. poliogenys* or *C. burkii*, more so than those of *C. xanthoschista* or *C. jerdoni*. The texture is close and very fine, and the shell is stout. In shape they are broad ovals and very little compressed towards the larger end. They vary in length between ·58 and ·59 in. and in breadth between ·48 and ·49 in. The nest was taken on the 14th of April, 1903.

The Allied Flycatcher-Warbler is very common in Lakhimpur and Eastern Assam as far as Cachar and Sylhet in the cold weather; but I failed to find it breeding even on the highest ranges of the North Cachar Hills, and the majority of the birds, at least, must go some way off to breed.

100. CRYPTOLOPHA CASTANEICEPS.

Oates, F. B. Ind. i. p. 427.

Hodgson's description of the nest of this little bird would agree well with those that I have taken except in one point, and that is that I have never seen any stems used in its construction and very seldom any lichen.

The nest may be placed either on the ground itself, in amongst the roots of some tree, or from two to four feet from the ground in bamboo-clumps, masses of creepers, or in the moss and other vegetation covering some old tree. In the latter case it is always more or less built into some shallow hollow, but is never, so far as I know, placed inside a hole.

The eggs, which have not been described hitherto, are, of course, pure white. They are the least glossy of all the eggs which I have seen of this genus and are not so strong, though by no means fragile in proportion to their size. In shape they are typically broad ovals, with the smaller end decidedly compressed and quite pointed.

They measure about ·55 by ·41 in. on the average, but vary in length between ·53 and ·57 and in breadth between ·40 and ·42. The birds are, as a rule, early breeders, the majority laying in April and early May, but I have taken a single fresh egg as late as June the 12th and have found young still in the nest in August. I have, however, seen nearly fully fledged young in the first few days of April.

I have not taken the nest below 3500 feet, and the majority were between 4000 feet and 5000 feet.

101. CRYPTOLOPHA CANTATOR.

Oates, F. B. Ind. i. p. 427.

Tickell's Flycatcher-Warbler occurs throughout the hills of Assam, both north and south, but is nowhere at all common, and in the fifteen years that I was stationed in the North Cachar Hills I took less than half a dozen nests. These were, however, sufficient to shew that the accounts of its nidification as given in Hume's 'Nests and Eggs' (second edit.) were wrong.

My first nest was taken at Laisung in 1893. This was a most beautiful little moss-ball wedged in between the branches of a dead sapling lying on the ground amongst dense bushes. The moss used in its construction was of the brightest and greenest, and all in very fine bits, so that the nest was very compact and well made, measuring barely 4½ inches high by under 4 inches wide. The lining was entirely of down from Bombax-seed, but this had been flattened down by the three young birds which the nest contained. The parents hovered round in a great state of anxiety whilst I was examining the young, but returned at once to their nest as soon as I left. My second nest was brought to me by a Naga the next day, who took it in the same valley, catching the cock bird on it. It contained a single egg, which took some finding amongst the cotton-down which filled the interior. It was placed on a mossy bank amongst stones.

The third nest taken was wedged amongst the moss-covered roots of a large tree; it agreed exactly in description with the others, but was somewhat larger, measuring about six by four inches. It contained four hard-set and unblowable eggs.

Yet a fourth nest was found in the lower part of a bamboo-clump, between two huge dead bamboos which had a little moss and much lichen on them. The nest was like that last described, and had the normal lining of cotton-down completely filling the interior and sticking out through the opening. It contained two fresh eggs, even smaller than those of *C. castaneiceps*, measuring only ·48 by ·40 in. and ·48 by ·39 in. In shape they are broad ovals, hardly at all compressed towards the smaller end. The texture is very fine and close, and the shell extremely tough for so tiny an egg: they are, of course, white and fairly glossy.

The other eggs which I have seen were exactly similar, but were, I think, bigger, though I have not their exact measurements.

This bird breeds in April and May and, in North Cachar, not under some 4000 feet.

102. TICKELLIA HODGSONI.

Oates, F. B. Ind. i. p. 432; Osmaston, B. N. H. S. J. xv. p. 512.

The only collector who has ever taken the nest and eggs of this tiny Warbler is Mr. Osmaston, who thus describes them in the Bombay Journal:—

"I came across one on the 6th of June in a thicket of saplings in a lofty forest at about 6800 feet.

"The nest was placed in a fork at the top of a Symploces sapling, seven feet from the ground. It is roughly egg-shaped, with a hole $1\frac{1}{2}$ inches in diameter near the top, and measures 6 inches in height by 3 inches in width. It is composed entirely of dry leaves (chiefly bamboo) with a lining of black rhizomorph, and, lastly, inside the latter a lining of bits of soft dry bamboo-leaf.

"The eggs, three in number, were nearly fresh. They have little or no gloss. The ground-colour is a pale claret, and they are spotted, speckled, and streaked, chiefly at the large end, with darker claret markings.

"The mean of the measurements of the three eggs is ·63 by ·47 in."

103. HOREITES BRUNNEIFRONS.

Oates, F. B. Ind. i. p. 440; Osmaston, B. N. H. S. J. xiv. p. 816.

The description given of the eggs of this species in Hume's 'Nests and Eggs' is wrong, but has fortunately been rectified by Osmaston, who took several nests on the Singalila Range, Sikkim, at a height of some 10,000 to 11,000 feet, where he found the bird to be quite common. He says:—

"I found four nests of this species containing 4, 3, 3, and 2 eggs respectively, all in the first week in June, built in low scrub about a foot from the ground at an elevation of about 11,000 feet.

"The nest is domed and rather oval in shape, 6 or 7 inches high and 4 inches thick, with a circular opening near the top about $1\frac{1}{2}$ inches in diameter. It is composed externally of moss, dry grass, and dry bamboo-leaves, and lined rather scantily with fine grass and lastly with feathers.

"The eggs are slightly glossy ovals. In colour they are peculiar, the ground being terra-cotta with darker markings of the same colour, chiefly at the big end.

"The average of 12 eggs gives the following: length 0·72, breadth 0·49 in."

Two eggs sent me by Mr. Osmaston agree well with the above description. They are rather long ovals, the broad end not very obtuse, and the smaller end almost pointed though not much more compressed than the larger. The ground-colour is bright pale pink terra-cotta, and at the extremity of the broader end there is a dense ring of specks of dark terra-cotta and brick-red which coalesce with numerous underlying markings of dull grey and lavender. Over the rest of the egg are scattered sparingly very faint freckles of lavender and terra-cotta, hardly to be noticed unless the egg is closely examined.

104. LANIUS COLLUROIDES.

Oates, F. B. Ind. i. p. 462; Harrington, B. N. H. S. J. xiv. p. 598.

Capt. Harrington and others have taken many nests of the Burmese Shrike since Blanford and Oates wrote the 'Fauna of British India,' but the only record that I can find is that of the first named.

He notes (*loc. cit.*) :—"It is a wonder that this bird's nest has not been described before, as it is very common up here, especially during the breeding-season, which is from April to the beginning of June. All the young birds have left their nests now (23rd June), and everywhere one goes one is greeted with the angry chatter of the old birds. Whilst they had eggs in their nests they were very silent and generally kept out of sight. The nest is usually placed on the top of small saplings, against the trunk of trees, and between the fork of good-sized branches at 5 to 12 feet from the ground. It is neatly made of leaves, lichens, and feathers, &c., covered with cobwebs and lined with fine grass. The size of nest varies a good deal, if placed in between branches it is much smaller and matches the tree-trunk, if concealed by leaves it is much larger. The eggs are very much like the English Butcher-bird's and vary in the same way, there being two more or less distinct types, one pinkish white with brown and purple spots, the other greenish white with sepia and ash-coloured spots, a few have a dull yellow ground-colour with spots the same as the last. Size ·8 to ·86 by ·67 to ·66 in."

I have a fine series of these eggs which I owe to Capt.

Harrington and other Burmese collectors. They agree well with the above description, but I have two clutches which deserve mention, one with a bright pink ground and brilliant red-brown markings, and one with a grey ground and grey-brown and green-brown markings.

The birds appear to lay from four to six eggs in a clutch, five being the most common number.

105. Pericrocotus albifrons.

Oates, F. B. Ind. i. p. 489.

I have received two pairs of eggs of this Minivet from Mr. K. Macdonald, and a nest from Capt. Harrington taken at Monyma, Upper Burma.

The nest sent me is a tiny shallow cup, composed of the finest grasses and roots all matted together with cobwebs. Lining there is none, beyond two small feathers stuck to the grasses with spiders' webs, but the whole of the outside of the nest is covered with tiny scraps of silver-grey and light brown bark, all closely massed into the very structure of the nest itself, so that there are no ends or loose bits of any sort. The nest is placed on the horizontal fork of a small sapling. It does not hang between but is actually placed on the two twigs, these forming part of the base itself and shewing bare through it.

It measures 1·8 in. in diameter and is about ·6 in. deep. Nowhere are the walls over ·4 in. thick, and in most places they are ·2 in. or less, the actual rim being about ·1 in.

The eggs are typical Minivet's eggs, though very pale in coloration, indeed they are not unlike washed-out specimens of those of *P. brevirostris*. The ground-colour is pale grey, and the markings consist of small blotches and specks of dark brown fairly thickly scattered over the whole surface, in one egg more so at the larger end than elsewhere, in the other three about the same all over. In character these marks are mostly longitudinal, as in *P. brevirostris* and *P. perigrinus*, but they are neither so large nor so numerous, so that the prevailing tint is that of the grey ground-colour.

In shape they are rather broad ovals, one being slightly compressed towards the smaller end, the others being very regular. The surface is smooth, but almost glossless; the texture is fine and the shell strong.

They measure on an average ·63 by ·51 in.

Both nests were taken in May, 1901.

106. ORIOLUS ANDAMANENSIS.

Oates, F. B. Ind. i. p. 504; Butler, B. N. H. S. J. xii. p. 396.

The first nests taken, or at all events described, were those recorded by Butler. He writes:—"I found two; the first on May the 19th, situated about 8 feet from the ground on a small Bain-tree (*Pithecolobium* sp.?) by the roadside, was a very small and slight nest of the usual Oriole type, and contained one large young bird only. The other nest, taken on June 1st, was some fifteen feet from the ground in a *Hibiscus* of some sort, standing some forty yards from the jungle edge, and contained three hard-set eggs. This nest was much larger and more solid than the first, almost double the size; it was lined with fine roots and fibres, underneath which was a layer of strips of dead plantain-leaf (one of these pieces as large as 6 inches by 2 inches). Then came the foundation of dead and skeleton leaves held together and suspended from the fork of the branch by fibres of the Cocoanut Palm.

"*Eggs*: ground-colour white with a strong pinkish-brown tinge, spotted at the larger end with madder-brown, with a few underlying purplish-grey spots. Some of the larger spots have a pinkish-brown nimbus round them, giving them the appearance of having been put on a wet surface and having run."

107. GRACULIPICA NIGRICOLLIS.

Oates, F. B. Ind. i. p. 534; Harrington, B. N. H. S. J. xiv. p. 598.

A short note by Capt. Harrington in the Bombay Journal describes the bird as building "a large conspicuous nest at the end of branches. Nest composed of straw, grass, feathers, &c. Eggs pale blue, measuring 1·35 by ·96 inch."

His eggs were taken at Taungyi, Upper Burmah.

In a letter he writes:—"*G. nigricollis* is very common in the Southern Shan States east of Taungyi and Fort Steadman; it is also found sparingly up the Chindwin River. It makes a huge nest of the same description as *Sturnopastor superciliaris*, generally placed near the top of a *Ficus*, but I have found it low down in a hedge in the Shan States. The eggs are of the usual Myna type, but larger. Burmese birds breed in April, May, and June."

Capt. Harrington was good enough to send me several clutches of this Myna's eggs, as well as the skins of the parent birds. The eggs are just like those of *Acridotheres tristis*, but are generally perhaps rather darker blue, and, possibly, rather finer in texture. My clutches number either three or four. Ten eggs sent to me average 1·31 by ·91 inch.

108. GRACULIPICA BURMANICA.

Oates, F. B. Ind. i. p. 535.

The only note that I have on this bird's breeding is one kindly sent me by Capt. Harrington. In a letter to me he writes: "*G. burmanica* is the common Myna of Upper Burmah in the jungles. It breeds both in holes in trees and in *zyats* and houses. I found a pair building in the verandah of the Kalaura dak-bungalow in May, and outside the nest was the remains of a former tenant, suspended by the leg by a piece of string which had been used in the construction of the original nest.

"It breeds, probably, from April to June."

Capt. Harrington sent me several clutches, two of which consisted of five eggs. They are much smaller than those of *G. nigricollis*, and all those sent are distinctly paler; moreover, they differ also in shape, for whereas the eggs of *G. nigricollis* are generally rather long ovals and are distinctly gracefully shaped, those of *G. burmanica* are shorter ovals, more suddenly compressed towards the smaller end and, on the whole, more pointed.

My eggs average in size 1·05 by ·81 in.

109. ÆTHIOPSAR GRANDIS.

Oates, F. B. Ind. i. p. 541; Harrington, B. N. H. S. J. xiv. p. 598.

Capt. Harrington remarks that this Myna "builds in holes of trees, making a rough nest of straw and feathers. Eggs generally two, sometimes three. Pale blue, measuring 1·16 by ·85 inch. Breeding-season, April and May."

Later in a letter to me he gives an account of the nesting of this bird and *Æ. albicinctus,* which I quote under the latter bird. He also informs me that they rarely lay as many as four eggs. Six eggs in my collection, which I owe to him, are just like eggs of *Æthiopsar fuscus.* They range between 1·15 and 1·26 inches in length, and between ·8 and ·87 inch in breadth, and average 1·22 by ·84 inch.

110. ÆTHIOPSAR ALBICINCTUS.

Oates, F. B. Ind. i. p. 541; Harrington, B. N. H. S. J. xiv. p. 598.

The only notes that I have on this bird, as also specimens of its eggs, I owe to Capt. Harrington. In the Bombay Journal he merely gives the following note:—"Habits exactly the same as the last, in fact the two very often build in company in holes in old trees. Eggs pale blue, four in number, measuring 1·1 by ·8 inch."

In a letter to me, however, he gives the following interesting account. Writing of this bird and the preceding he says that he found "both common birds in the Shan States, and Bhamo and Onyetmyina districts, and on the Upper Chindwin, but they are not found in the dry zone of Burmah so far as I know. They are both fond of nesting in company in holes of trees, making the usual untidy Mynas' nests of straw, feathers, and other odd materials. I have found *Æ. grandis* nesting in the roofs of houses, but not *Æ. albicinctus.* The strangest site, however, chosen by both kinds on the Upper Chindwin was the sandy banks of the river. Thousands must nest in holes in the banks of the Chindwin from about sixty miles above Kendat up to Honalui. The holes, I think, must have been either made or enlarged by the birds themselves, as they were bigger than those made by the Bee-eaters which were also nesting in their thousands in the banks of the same river.

"The extraordinary thing about these nests in the sand-banks was that every nest pulled out by us was lined with pieces of cast snake-skin, and we must have taken out a dozen or more. Except for these discarded snake-skins the nests were of the usual untidy type.

"These nests were taken in the latter end of May, when the majority had either young birds or were already empty; still even then a good number contained eggs, so the season probably lasts from the middle of April up to the end of May.

"Whilst *Æ. grandis* lays either two, three, or four eggs, *Æ. albicinctus* almost invariably lays four, very rarely five.

"The eggs, of course, are of the usual Myna type. Those of *Æ. grandis* are rather larger and are somewhat more pointed at the smaller end, those of *Æ. albicinctus* are smaller and are more blunt at the smaller end.

"There is no confusing the two birds, as they are both conspicuous from some distance, and as we went up the river in a steamer we could see them constantly going in and out of the holes, dozens at a time."

Two clutches of eggs sent to me are as described above, and average 1·05 by ·78 in., varying between limits of 1·02 and 1·12 inch in length and ·76 and ·81 in breadth.

111. Siphia strophiata.

Oates, F. B. Ind. ii. p. 8; Osmaston, B. N. H. S. J. ix. p. 190.

The only record of this Flycatcher's nesting is that of Mr. B. B. Osmaston, of the Forest Department, who obtained two nests whilst touring in the Tekri-Garwal at an elevation of some 8000–12,000 feet.

As Mr. Osmaston shot the cock bird off the nest there can be no question of wrong identification, nor is it a bird about whose identification any difficulty can exist. In spite of this, I think that it is most likely that future collectors will find that Mr. Osmaston's nest and *white* eggs were abnormal, and that the eggs will agree with those of other members of the genus *Siphia*. With this comment, I reproduce Mr. Osmaston's note:—

"The first nest to be described is that of the Orange Gorgetted Flycatcher (*Siphia strophiata*). On May 23rd I noticed a bird fly into a hole, about 8 feet from the ground, in a dead yew branch, in which I found, on examination, a nest containing two freshly hatched young birds and one addled egg.

"I watched the parent birds for some time with binoculars. They were very wary and would not again visit the nest; however, I saw sufficient to satisfy myself as to their identity.

"On the following day I found a second nest of the same species in a rift in a Karshu oak, about five feet from the ground. It contained three much-incubated eggs, exactly similar to the egg found on the previous day. The nest was rather a loose structure, cup-shaped, composed of moss and maiden-hair rachis, lined with the latter chiefly, but also with a few feathers and some papery substance resembling birch bark. I shot one of the parent birds (the male) for identification.

"The eggs were pure white elongated ovals and fairly glossy. The average of their measurements gave:—

" Length	·76 in.
Breadth	·53 ,,

"These nests were both found at an elevation of about 9000 feet."

112. CYORNIS CYANEUS.

Oates, F. B. Ind. ii. p. 13.

We have twice had the nest and eggs of this bird brought to us by Nagas living on the eastern borderland of Assam.

A single egg in my own collection is an enlarged facsimile of many eggs of *C. tickelli* and *C. rubeculoides*.

The ground-colour is pale yellow-grey stone and the markings consist of innumerable tiny freckles of rather bright reddish brown scattered all over the surface, but most thickly at the larger end, where they are confluent and form a cap. There is a distinct gloss and the surface is very smooth with a strong compact shell—more stout in proportion to its size than those of most *Cyornis*, which are usually brittle. The shape is a broad oval, a little compressed towards the smaller end, which is obtuse, and the size is ·93 by ·69 in. The egg was taken on the 25th of June, 1902.

The three eggs in the collection of Dr. Coltart are just like mine.

The nests were bulky structures of moss, and were said to have been placed on the ground on the banks of a hill-stream.

113. CYORNIS MELANOLEUCUS.

Oates, F. B. Ind. ii. p. 18.

I obtained this Flycatcher's nest in North Cachar, but it was not until I had been there many years and had almost given up hope that at last I found it.

The first nest which I took was a tiny cup of moss, moss-roots, and stems of maiden-hair ferns, all neatly and compactly interwoven, the moss alone shewing outside. The lining was of the very finest hair-like roots alone, many of these being of considerable length, yet wound round with the greatest possible neatness. It was placed on the ground on the rocky side of a steep hill and was semi-protected both above and on each side by stones, in the hollow between which it was fitted. All around grew bracken, wild balsams, and small ferns, and the nest was quite concealed from view, but was found by a Naga through the actions of the parent birds.

By the time that I arrived both parents had been snared in nooses, and I took the contents, two tiny eggs, so tiny that I fear they must be abnormal, for they measure only ·54 by ·46 and ·52 by ·44 in.

They are typical little *Cyornis*-eggs, pale stone in ground-colour with numerous minute freckles of dull reddish. In one egg these are numerous everywhere, though mostly at the larger end, where they form a faint ring. In the other they are almost absent over the smaller half, but are even more profuse over the other end, where they coalesce and form indefinite cloudy blotches.

There is no gloss, but the shell is fine and close though rather fragile. In shape the eggs are stout little ovals, the two ends being almost equal.

This nest was taken on the 29th of April. Another found on the 14th of April, 1899, contained four young just hatched. This nest was like the other, but was placed amongst the protecting roots of a large tree. Outwardly it measured about 4 by 6 inches and the diameter of the cup was some 2 inches by about 1·25 inches deep.

Both nests were at an altitude of between 5000 and 6000 feet.

114. CYORNIS SAPPHIRA.

Oates, F. B. Ind. ii. p. 20.

This little Flycatcher was not uncommon in North Cachar on the highest peaks to the extreme north-east, yet, though I took several nests, I never obtained a male in full breeding-plumage, and nearly all the specimens that I collected—mostly trapped on their nests—were young males in autumn plumage.

I took no nests of this species on the ground nor did any of my collectors; all were placed either in, or half in, holes and hollows of tree-stumps. Where they were altogether inside, the entrance was often quite exposed, but where they projected at all they were always well concealed by moss, lichens, ferns, or orchids.

For the size of the bird the nest was often bulky, the materials filling up hollows, sometimes eight inches across, and the depth of the nest itself being sometimes as much as three or four inches.

In all cases the materials used were of the same kind, principally moss, and this, in the main, consisting of long thin sprays taken from the neighbouring trees, which were covered with hanging moss often as much as 18 inches in length.

At the base of the nest this was thrown in anyhow and was much mixed with roots, lichen, fern-stems, small bits of bark, and other similar articles; but as the nest itself began to evolve from the materials, the rougher articles were discarded, and finally a neat little cup was formed almost entirely of moss, moss-roots, and the rhachis of maiden-hair ferns, while in a few cases feathers were also incorporated with the other materials, or sometimes a little cotton-down. The interior of the cup was rather more than 2 inches in diameter, rather less than 1 inch in depth, but in some cases the depth exceeded the width.

I took four nests with eggs and several with young, and the full complement of eggs is undoubtedly four. These vary from the type of those of *Stoparola* to the paler forms of those of *Cyornis*, and even the small series which I have seen shews great variation.

A clutch of four fresh eggs taken on the 21st of June, 1899, is of the palest form found in *Cyornis*. The ground is a pale grey-green stone-colour and the marks consist of very pale greyish-red freckles scattered thinly all over the surface, but rather more numerous towards the larger end, where, in two eggs, they form indistinct caps. These four eggs are normal ovals, neither very broad nor very long. One end is a good deal smaller than the other, but is neither compressed nor pointed. The shell is smooth, close, and fine, but glossless and brittle. They measure ·72 by ·53 in., ·71 by ·52, ·70 by ·53, and ·68 by ·51.

In another clutch taken on the 4th of May, 1891, the eggs in every respect the extreme opposite of these and in type like those of *Stoparola*. The ground is white with only the faintest tinge of cream, and the marks consist of tiny freckles and specks of reddish brown disposed in a ring at the extremity of the broader end. The texture is the same, but there is a decided gloss, and in shape they are longer ovals, the smaller end rather compressed and well pointed and the larger end also inclined to be somewhat pointed.

These two measure ·63 by ·44 in. and ·62 by ·44 in.

The female belonging to this nest was caught, but I did not identify it for some years, when I had an opportunity of comparing it with the British Museum skins.

My other eggs are intermediate between these two clutches, but are more of the true *Cyornis*- than of the *Stoparola*-type. They were all taken either on the highest peaks to the east of the district or in the valleys just below them. None were found under some 4000 feet.

115. CYORNIS PALLIDIPES.

Oates, F. B. Ind. ii. p. 22; Cardew, B. N. H. S. J. x. p. 147; Davidson, ibid. xi. p. 667.

Long ago Mr. Davidson took the nests and eggs of this Flycatcher in Kanara, but was unable to capture or identify the parents, so the first authentic account of this bird's nesting is that given by Mr. Cardew (*loc. cit.*). Writing from Ootacamund, he notes :—

" In the same month I found the nest of another bird, of whose identification I can find no record, namely the somewhat scarce little Flycatcher, *Cyornis pallidipes* (Jerdon). . . . . The nest was found at an elevation of 4000 feet above the sea. It was placed in a hole in a bank, under the protection of a large rock, and by the side of the old ghat-road or riding-path to Coonoor, on which scores of persons pass up and down daily. It was composed of roots on the outside, with a few dry leaves, and lined with fine fibres, and contained three young birds a few days old. On another occasion, in the last week in May, I came on a pair of these birds at about the same elevation, with fully fledged young, so the breeding-season must extend from April to June. . . . . The young of this Flycatcher . . . . . are much marked with orange, and resemble the young of *Ochromela nigrorufa*, but are, of course, larger and without the orange quills."

Mr. Davidson thus writes of the eggs he took in Kanara, above mentioned :—

"At Supa also I once obtained a nest which I believe belonged to it. This was brought to me on the 15th May, 1893, by a man who had noticed it a day before, but when he saw me in the morning in the neighbourhood of the rice-field he was working in, instead of telling me about it and taking me to the nest, he rushed off to the nest and brought it to me, in so doing breaking one of the three eggs it contained. As it reached me within twenty minutes of its being taken, and I started at once to the spot, I hardly doubted that I should be in time to identify the owner, but though I waited two hours not a bird came near the nest, and I then reluctantly left a man near it and searched the whole forest round. It was singularly devoid of birds, and all I saw was a pair of *Zosterops,* another of *Kittocincla,* and a pair of this bird and a few Woodpeckers. . . . . The nest was in a hollow in the top of a dead stump about one and a half feet from the ground, and was composed of green moss lined with white lichen and with a few threads of fine grass and black roots. The eggs had been originally three in number, and were of a dull greenish white with bold brownish blotches over the larger end. They were not exactly what one would have expected the eggs of this bird to be, and were considerably larger than those of *C. tickelli.*"

Later, Mr. Bell found *C. pallidipes* breeding in Kanara and took nests and eggs, some of which he sent to Mr. Davidson; the eggs proved to be similar to those taken by the latter in the same district, and enabled him to identify them correctly.

A clutch of three eggs was generously given to me by Mr. Davidson, and these agree well with what he has written about them. They are certainly *not* typical *Cyornis* eggs, yet, as the uniformly coloured eggs of some clutches of *C. tickelli, C. rubeculoides,* and others stand at one end of the series, so these might form the limit at the other end.

The ground-colour is a pale yellow stone and the markings consist of bold blotches, specks, and spots of reddish brown with others underlying them of pale purple, lavender, and reddish grey. At the larger end these markings are numerous, often running into one another, and forming a rough cap or broad ring, but over the smaller half they are more sparse and are also smaller and more speckly in character. The surface is smooth and has a slight gloss, whilst the texture is the normal fine but fragile texture of all eggs of *Cyornis*.

In shape they are broad blunt ovals, measuring ·79 by ·57 in., ·78 by ·56, and ·77 by ·57.

116. ALSEONAX LATIROSTRIS.

Oates, F. B. Ind. ii. p. 35; Shelly, B. N. H. S. J. ix. p. 223; Davidson, ibid. xii. p. 6.

This Flycatcher's nest has of late been taken by several collectors, the first record that I can find being that of Lieut. B. A. G. Shelly, who sent a note to the Bombay Journal as follows:—

"I am forwarding to-day a nest and four eggs of the Brown Flycatcher (*Alseonax latirostris*), as I understand that the eggs of this bird have not yet been recorded. These eggs I obtained near here on the Ghauts (Mhow). The first nests were taken by Sergt. Kemp and myself on the 17th June, on which occasion the eggs were mostly fresh; the last were taken on the 29th, when fresh and hard-set eggs and young birds were met with. . . . .

"With one exception all the nests have been found on the dwarf teak-trees which grow so plentifully on the Ghauts. They are, as a rule, built on thick, bare, horizontal branches, at some little distance from the trunk and, on average, eighteen feet from the ground. The bird seems to prefer the more secluded nullahs to breed in, generally selecting for this purpose a tree close to the bank. The nest is rather large for so small a bird, and except for being placed so high would not be difficult to find. Four seems to be the full complement of eggs, though three hard-set eggs have been met with."

The following year I received a clutch of four eggs from Mr. Kemp, which were taken on the 16th of May, 1895.

Mr. Davidson took the eggs of this bird the same year in North Kanara on the 4th of May. He writes:—"I saw one of these birds fly from a tree overhanging the road. I followed it into the forest to be sure it was *A. latirostris*, and had I had any doubt I would have shot it; as there was none, however, I walked back to the road and was moving off, when the bird flew again over my head to the same tree, a *Matti*. I glanced at it as it flew, and saw it light on a lump in the branch, and returning saw that there was a nest. I sent a boy up the tree and he reported four eggs, which after some difficulty were safely brought down, and I shot the bird as a proof of its breeding so far south. The nest was large and solid, composed of moss and lichen, and lined with a few fibres and some feathers, mostly Oriole's. It was about fifteen feet from the ground and in the middle of a horizontal branch. It contained four extremely small olive-green eggs, a good deal smaller than others of this bird received from the neighbourhood of Mhow."

I have several clutches of this bird's eggs taken by different friends, and the complete clutch seems to be either four or three.

They are typical little *Cyornis* eggs, as might be expected from the very close affinities between *Cyornis* and *Alseonax*, and I doubt if they could be distinguished from some of the eggs of the smaller species of the first-named genus.

In ground-colour they are very pale stone-colour, varying somewhat in tone between reddish and greenish. The markings consist of microscopical specks of reddish, which cannot be distinguished without a good glass, and the eggs appear to be uniform, though rather deeper in coloration at the larger end, where there is sometimes a faint indication of a ring or cap. One clutch which I have appears to be uniform pale grey-green and a second pale olive-brown.

In shape they are regular ovals, in one clutch rather compressed and pointed towards the smaller end.

The texture is smooth and close, but glossless, and the shell is, perhaps, comparatively stronger than in the *Cyornis* group.

My eggs vary between ·62 and ·67 in. in length and between ·48 and ·51 in. in breadth.

117. ALSEONAX RUFICAUDUS.

Oates, F. B. Ind. ii. p. 36; Wilson, B. N. H. S. J. xii. p. 637; Davidson, Ibis, 1898, p. 22.

The only notes that I can find of this bird's breeding are those by Col. Wilson and Mr. Davidson above cited, although I believe that several other observers have taken the nest.

The first note referred to is: "We found one nest on the 18th June, on a pine-branch at Sonamorg, situated about ten feet from the ground; it was very well concealed, and, had not the bird flown off, it would certainly have escaped observation. It was a small cup-shaped nest of moss, lined with hair and feathers. It contained two slightly incubated eggs. The ground-colour was buff with a rufous clouding and a few brown spots on the larger end. They measured ·72 by ·52 inch. We shot the bird, and, though we made a careful search, saw no others during our stay."

Davidson in 1896 took a number of nests, one at Sonamorg and several at Gund, where he found the bird very common. Whereas Wilson describes the nest as small, Davidson states that his were "large, solid cups generally built within reach or at the most fifteen feet or so from the ground on the stumps of pollarded trees." He says that the birds were very shy, and that nests which were in any way touched or interfered with were promptly deserted.

The number of eggs he found to be either three or four, and a clutch of the latter number I owe to his generosity. These eggs agree well with his description.

In colour they are pale clear olive-green, the green being so pronounced that it might almost be called sea-green. If looked at casually they appear to be uniformly coloured, the tint merely deepening slightly at the larger end. But when they are examined with a powerful glass it is seen that they are green-grey in ground-colour with stipplings of pale red-green all over, these becoming deeper and more pronounced at the larger end.

The texture is in every way exactly like that of *A. latirostris,* already described.

The eggs measure from ·65 to ·66 in. in length and from ·49 to ·51 in. in breadth. In shape they are broad ovals, with very obtuse smaller ends.

118. Oreicola jerdoni.

Oates, F. B. Ind. ii. p. 66.

Jerdon's Bush-Chat was common in North Cachar and undoubtedly bred in the high grass-covered hills to the north of the district, but I never succeeded in finding its nest or in obtaining any birds which shewed that they were, without doubt, breeding in the place where they occurred.

In April 1904, when touring in the north of Lakhimpur, I found these birds extremely numerous in the wide grass-plains running along the foot of the hills; they were present literally in hundreds and soon shewed by their actions that they were breeding. A Miri, who was with me, told me that he knew of a patch of grass where they nested, and we accordingly went to a wide grass-plain, about two miles across, covered with sun-grass some four feet high, and situated, in a bee-line, about eight miles from the nearest hills. Here four of us hunted hard for about four hours, but, though there were many birds and they were undoubtedly engaged in nesting, we could not find a single nest. At last, as work called me back to camp, I called a halt, and we all returned to the road. As we reached it, my foot struck a tuft of grass and out flew a female *O. jerdoni*, and on looking down and parting the grass we found the much sought for prize, a nest with four eggs. It should be explained that the road was nothing but a wide track through the grass-plain, covered with short grass and with tufts of stubbly sun-grass dotted about its surface. In one of these tufts at the edge of the road the nest was placed, right in amongst the roots, which appeared to have been worked out by the birds to form a hole in which it could be placed. Until the roots were torn on one side and the tangle of grass parted, nothing could be seen, except the outer edge of the nest. This was a compact little cup, made entirely of black roots and coarse black fibres and lined with fine grasses and grass-roots. It was so well put together that, though the outer material was all interlaced with the grass-roots growing round, it still retained its shape and consistency when torn out.

The inner cup was very tiny, only 1·8 in. in diameter and about 1 in. deep, but the outer diameter and depth were, roughly speaking, about 6 by 4 inches respectively.

The nest contained four eggs, rather hard-set. This was on the 20th of April.

In 1904 we found only one other nest, although men were specially set to hunt for them for days together; they are most terribly hard nests to find.

This year (1905) I have procured six more nests: two of which, taken by Mr. H. Stevens at the foot of the Dafla Hills, were found in the roots of ekra.

The other four were taken by myself and my men. Two were found in places just like that first described, except that they were situated in the grass-plains themselves and not in openings. The remaining two were taken from holes in banks. One was placed in a hole in a sandy bank, forming the side of a rough pit from which soil had been taken to make a road. The bank was covered with very coarse, short grass, but except for a few scattered bushes the surrounding country was quite open—in fact, grazed down to within a few inches by numerous cattle. The pit itself was more or less overgrown with coarser grass, as the cattle could not conveniently graze there.

The last nest was taken from a hole in the bank of a so-called road. All over this part of the road the grass was some inches high and extremely dense: on one side the ground sloped upwards and formed a shelving bank where the grass was longer, and there were many weeds and small bushes. Amongst the grass-roots was a small natural hollow, and in this the nest had been placed and was discovered by the bird flying out as we passed.

Judging by the actions of the birds, I think more breed inside ekra-jungle than elsewhere; but in such places it is long odds against finding the nest, although the bird is extremely common during the breeding-season in certain places. It is curiously local in its habits and will haunt one grass-plain or patch of ekra in great numbers, yet will not be found at all in the adjoining patch, although to human eyes they appear much the same.

I have taken altogether thirty eggs, of course many unblowable, and find that four is invariably the full complement. I have never seen less than four hard-set and have never found five.

The nests were all much the same as that first described, and it was very noticeable that in the majority of instances very dark material was used. In a few, however, the nest was composed chiefly of stuff that looked like cocoanut-fibre, and was, I believe, the fibrous outer part of ekra-roots; this was light yellow in colour. In shape externally the nest merely fits the place in which it is built, but the inner cup seems always to be very neat and well finished, averaging some two inches in diameter and being a very regular semisphere.

When trying to find the nest by watching the birds, I was doomed to many disappointments, as they kept dodging into holes and crannies in the roots, apparently in search of food, and constant inspections of these places resulted in nothing.

The eggs are the most brilliantly coloured of all those of the *Saxicolinæ,* a uniform bright blue, even brighter than in the Accentors. In only one clutch have there been any markings: even in this two eggs are unmarked; one has a few very faint specks and spots of pale rufous, forming a faint ring round the larger end, and only the fourth has the same markings at all defined. In this, however, there is a fairly well-marked ring of tiny rufous blotches and freckles about ·15 inch wide, and it looks like a very brightly coloured, but faintly marked, egg of *Pratincola maura.* Curiously enough, though I have been constantly on the look-out for such markings, this was the last clutch of all obtained.

The texture is very fine and compact, and the shell exceedingly stout for so tiny an egg. The surface has a slight gloss.

In shape the eggs are broad ovals, but with one end distinctly pointed, though not compressed.

In length they vary between ·60 and ·71 inch and in breadth between ·49 and ·53 inch. The average of thirty is ·63 by ·50 inch.

119. SAXICOLA ISABELLINA.

Oates, F. B. Ind. ii. p. 77; Rattray, B. N. H. S. J. xii. p. 339.

In 1898 Col. Rattray was successful in finding the nest of this bird at Thull:—

"I was lucky enough on June 7th, 1898, to find a nest with two eggs; unfortunately the native with me handled the nest rather roughly before I could stop him. I left it three days in hopes of more eggs being laid, but I found it deserted; I, however, originally saw the bird fly off the nest. It was a neat cup of grass under a stone, with a deep egg-cavity lined with finer grasses: eggs, two, of a clear pale blue, marked all over with rusty-red spots like dried blood; shape, long narrow ovals, slightly pointed at the small end: elevation about 4000 feet. I found a second nest in a similar situation with young ready to fly on the 24th July, 1898."

I have a clutch of five of these eggs taken in Turkestan on the 14th of May, 1902. They are very pale blue, indeed they look white unless placed against really white eggs, and the marks consist of minute specks of red dried-blood colour sparsely scattered at the larger end.

They are ordinary ovals, slightly pointed, and measure ·80 by ·61 inch.

120. SAXICOLA DESERTI.

Oates, F. B. Ind. ii. p. 78; Marshall, B. N. H. S. J. xv. p. 355.

The only note to hand on this bird's breeding is the following by Capt. Marshall from Quetta:—

"I found a nest of this bird on May 24th. It was placed on the side of a bare bank of mud about ten or fifteen feet high, and was concealed under the root of a small dead shrub;

it was composed of roots and fibres, and contained three young birds nearly fledged."

121. MICROCICHLA SCOULERI.

Oates, F. B. Ind. ii. p. 88; Stuart Baker, B. N. H. S. J. ix. p. 22; Rattray, ibid. xi. p. 334.

The Little Fork-tail breeds rarely in North Cachar at considerable elevations, and I have taken three or four nests; but only two with eggs, and of these one clutch was on the point of hatching.

My first nest was found at Laisung, at an elevation of rather over 4000 feet, on the 2nd of May, 1891, and was placed in a rift in a large piece of flat rock forming part of the side of a deep ravine, along which ran a tiny stream, joining the larger Laisung stream just below.

My second and third nests were taken two years afterwards in ravines about the same place, but still higher up, and were placed in exactly the same sort of situations, though in one case the side of the nest-hole was composed of more than one stone.

The fourth nest was taken at Ninglo, a peak about 6000 feet high, in the east of North Cachar, on one side of which runs the Ninglo stream. In this case the nest was placed in a hollow in the mossy bank, but well screened by moss and weeds.

The first nest contained two eggs, the next two young birds, and the fourth three eggs just hatching.

The nests were in every case similar: small rather roughly made cups of moss fitting outwardly into the hollows in which they were placed, and with cups for the eggs averaging rather over two inches across by one inch deep. In all four the lining was of skeleton leaves, but these were neither so numerous nor so well inserted as is usual with Fork-tails' nests.

In the B. N. H. S. J., I described the two first-taken eggs as follows:—

"There were only two eggs, these being of a very pale, clear stone-colour blotched with pale reddish, and, where they form a ring at the larger end, the spots are also intermixed with a few others of pale lavender-grey. The character of the markings is longitudinal in the same way as with all the members of this family. The shell is smooth and fragile with a gloss, still the texture is not at all fine. In shape they are long ovals, compressed suddenly for fully two-thirds of their length, and they are decidedly pointed.

"They measure ·77 by ·53 in. and ·72 by ·53 in."

My other eggs agreed well with these, but were more speckled than blotched.

In 1897, Col. Rattray found this bird breeding at Mussoorie and took two nests, the description of which agrees in every detail with those taken by myself:—"The first nest was found in a hole in a rock on the bank of the Aglar River, at an elevation of about 3500 feet. . . . The second nest was found on the 21st June, at Kemptee Falls, at about 4000 feet, and was on a small shelf of rock, under a waterfall." The eggs would seem also to agree well with mine. Rattray describes them thus: "Large for the size of the bird, long and oval in shape, and a good deal pointed at the small end; colour white with a faint pink tinge, covered with numerous tiny pale red specks, most numerous at the larger end; very little gloss, but fine and satiny to touch. . . . Size, largest egg ·84 by ·63 in., smallest egg ·79 by ·58 in.; average of six eggs ·82 by ·61 in."

The eggs of my second clutch averaged, rather roughly measured, ·79 by ·56 in., so that Rattray's work out a good deal larger than mine.

XV.—*Notes on Birds observed at Monastir, Turkey in Europe.* By P. J. C. McGregor, British Consul at Sarajevo (late at Monastir).

The Turkish provinces constituting the territory commonly designated as Macedonia have received but scant attention from ornithologists in recent years, so that the following notes on bird-life at Monastir, based on observations made from March 1903 to August 1905, may, notwithstanding their meagreness, possess some interest for the readers of 'The Ibis,' and especially for such as may feel tempted to visit those regions.

During the whole of my stay at Monastir the country was in an abnormally disturbed condition, which rendered it difficult—even with an armed escort—to carry out any observations further than an hour's walk from the town, while my official duties seldom afforded me leisure for more than a "constitutional" either in the morning or towards sundown. With the exception, therefore, of two or three visits to the Kara Su marshes and a single ascent of Mount Peristeri, it was impossible to devote serious attention to the marsh-, mountain-, and lake-districts, while, for reasons easy to appreciate, the binocular had usually to do duty for the gun.

The town of Monastir, situated at an elevation of 2027 feet, and midway between the Gulf of Salonika and the Adriatic, occupies the eastern entrance of the natural highway leading from the extensive alluvial plain of Monastir to the lake-district of Okhrid and Southern Albania. Behind it the mountains rise steeply till they culminate in the rugged peak of Peristeri (8304 feet), which stands sentinel over the Lake of Presba, and to the north lies the hill-country of Krushevo and Demir Hissar. The town is divided into two sections by a small stream called the Dragor, which, after hurrying down from its source in a corrie of Peristeri, meanders across the plain amidst a sheltering growth of willows and poplars to lose itself in the sluggish Kara Su (Black Water). Like most Macedonian towns, Monastir presents from a distance the appearance of a large village embowered in greenery, and it is belted with shady avenues, extensive vineyards, and market-gardens, which bear witness to Bulgarian industry, as do the cornfields and pastures spreading fan-like up the mountain-sides, where the stone-built hamlets of Bukovo (2500 feet), Krstovo, Lakhtsé (2400 feet), and Brusnik (2850 feet) nestle among their cherry-orchards and groves of beech or walnut. The fields are divided by tangled hedges of hawthorn, sloe, elm, and dog-rose densely overgrown with bryony and honeysuckle, while countless streamlets come tumbling down through deep waterworn gullies, some of which, steep and rocky, gape like wounds in the red earth, while others form "dowie dens" of tender leafage for the Nightingale and the Warbler tribe.

The higher slopes south of Monastir are partially covered with a dense scrub of oak and hazel, and at Bukovo, St. Christopher, and other favoured spots the elms and beeches attain considerable dimensions; but the north side of the Okhrid road is repellently barren, and among the lofty mountains encircling the plain we may look in vain for forests of any extent or importance. The plain itself consists mainly of arable land and scanty pasturage, which soon becomes a tawny waste under the summer sun except in the immediate neighbourhood of the Kara Su, where extensive swamps and reed-beds provide admirable cover for marsh-birds and water-fowl.

With regard to the following notes on the birds, I wish to tender my grateful thanks to Herr Othmar Reiser, of the Landesmuseum, Sarajevo, and to Mr. W. Eagle Clarke, of the Royal Scottish Museum, Edinburgh, for their invaluable advice and assistance in compiling them.

1. TURDUS VISCIVORUS L. *Mistle-Thrush.*

The Mistle-Thrush was first observed on November 3, 1903, from which date till February 2 I frequently came across flocks of varying dimensions, not only in the kitchen-gardens and elder-brakes, but on the grassy uplands of Smolevo and Bukovo. They were sometimes associated with Redwings and were difficult to approach.

2. TURDUS MUSICUS L. *Song-Thrush.*

The only dates on which I observed the Song-Thrush were March 29, 1903, and March 24, 1904.

3. TURDUS ILIACUS L. *Redwing.*

On January 24 and February 3, 1904, I saw several flocks in the low meadows.

4. Turdus pilaris L. *Fieldfare.*

From the second week in January until about the 20th of February, flocks of hundreds frequented the plain and the mountain-pastures. They were very noisy and far from shy.

5. Turdus merula L. *Blackbird.*

A common resident above the level of the plain wherever there is cover. The volume of melody poured forth by the Nightingales and Blackbirds in spring surpasses anything I have heard elsewhere.

6. Monticola saxatilis (L.). *Rock-Thrush.*

Breeds in small numbers in suitable localities near the town. I saw a pair at Lakhtsé on April 15, 1903.

7. Cinclus aquaticus (L.). *Dipper.*

A pair or two haunt every mountain-stream. In winter they may be seen on the Dragor, where it traverses the most frequented quarter of the town, and they pair early in April. The specimens obtained seem to approach the variety known as *C. albicollis.*

8. Saxicola œnanthe (L.). *Wheatear.*

The Wheatear is not seen in numbers till April 10–15, the earliest dates of arrival noted being March 29 in 1903 and March 22 in 1904. The local birds disappear in August, and there is an interval of about three weeks before the northern migrants begin to pass through. None were seen after September 27.

9. Saxicola melanoleuca (Güld.). *Black-throated Chat.*

On April 20, 1904, I came across a flock in a vineyard and secured several specimens.

10. Saxicola albicollis (Vieill.). *Black-eared Chat.*

Evidently very rare. On April 19, 1904, I shot a male on the outskirts of the town, and on May 27 I saw a pair near Ekshi Su carrying insects in their bills, so I presumed that there was a nest in the neighbourhood.

11. Pratincola rubetra (L). *Whinchat.*

The Whinchat is a late arrival as a rule, although on

April 30 of this year I found fledglings. In 1903 I saw the first flock on May 3, and the young were abroad on July 11. I saw none after October 5, but suspect that the local birds had left about mid-September. In 1904 I observed one at Smolevo on April 25, and four days later a large flock of males. The Whinchat is never seen in the plain, but increases in numbers as the higher valleys and pastures are approached.

12. PRATINCOLA RUBICOLA (L.). *Stonechat.*

I have noted the Stonechat for every month in the year except December and January; but there is a decided migratory movement in March and October. The breeding-places are generally 200–400 feet above the level of the plain.

13. RUTICILLA PHŒNICURUS (L.). *Redstart.*

The Redstart seems to travel with the Blackcap, and is equally abundant on migration, but I am doubtful whether it ever remains to breed. On February 23, 1904, I was astonished to see a male in full breeding-plumage at Kapsokhori, near Salonika.

14. RUTICILLA MESOLEUCA (Hempr. & Ehr.). *White-winged Redstart.*

On April 11, 1904, I saw three or four examples of this form under some large willows in the plain. They were very tame, and afforded every opportunity for identification.

15. RUTICILLA TITYS (L.). *Black Redstart.*

I seldom observed the Black Redstart. In 1903, on October 16, I saw a bird of the year, and on the 25th of the same month an adult. In 1904 I observed a single specimen —a male—on the 15th and 16th of March, and on April 2 a large number, principally males, were resting and feeding on a sunny scree near the Resna road, where two days later I found but a couple.

16. ERITHACUS RUBECULA (L.). *Redbreast.*

Common in wooded or bushy spots above the level of the plain, to which it only descends in winter. There appears to be a migratory movement in the first week of April, when considerable numbers may be seen in a limited area.

17. Daulias luscinia (L.). *Nightingale.*

Arrives regularly about the 12th or 13th of April, and breeds in great numbers, especially in the dense vegetation which fills the lesser gorges. Never seen after August 30. It is in demand as a cage-bird.

18. Sylvia cinerea Lath. *Whitethroat.*

Arrives about April 23 and breeds in great numbers, shewing a preference for the tangled hedges of whitethorn, honeysuckle, and dog-rose, which are also the favourite haunts of the Red-backed Shrike. It disappears in the first week of October.

19. Sylvia atricapilla (L.). *Blackcap.*

Common on migration in spring and autumn. In 1903 I observed the first specimen, a male, on April 4, and on the 10th, after a heavy fall of rain, there were many in the willows along the Salonika road, all males, so far as I remarked. A certain proportion remain to breed, especially in the villages in cooler situations, but I have also found nests in gardens in the town of Monastir.

20. Regulus cristatus (Koch). *Gold-crested Wren.*

Is found wherever there are fir-trees. On November 4, 1903, I came across a small troop in a bushy gorge below Krstovo, near the level of the plain.

21. Regulus ignicapillus (Brehm). *Fire-crested Wren.*

On November 12, 1903, I shot one from among a flock of about twenty on the outskirts of the town.

22. Phylloscopus trochilus (L.). *Willow-Wren.*

The earliest date on which I recorded the arrival of the Willow-Wren is March 30, 1904, but the birds did not appear in numbers till April 15–19, almost invariably after stormy weather accompanied by rain or snow. Until April 25–29 they swarm among the willows and then disappear for the summer. In 1903 they arrived in numbers on August 30. There was a rush on September 13, from which date until October 4 they were to be seen everywhere, while a last strong contingent arrived on October 13. Isolated specimens were seen until November 11, when the weather was already damp and chilly. In the following year I observed only one spring rush on April 28, and the migration seemed to be on a smaller scale.

23. PHYLLOSCOPUS SIBILATRIX (Bechst.). *Wood-Wren.*

I shot one on April 30, 1903, and observed a pair on October 13 of the same year.

24. PHYLLOSCOPUS RUFUS (Bechst.). *Chiffchaff.*

Arrives about March 15, but is only occasionally seen till April 10–15. None appear to remain after the end of April, but during the third week in October there is a large southward migration, which lasts till nearly the end of November. Isolated specimens may be seen in sheltered spots in the first week of December.

25. ACROCEPHALUS STREPERUS (Vieill.). *Reed-Warbler.*

Abundant in the Kara Su marshes in summer.

26. ACROCEPHALUS PALUSTRIS (Bechst.). *Marsh-Warbler.*

Abundant in the cornfields and swampy meadows, at the edge of which it builds its nest among hemlock, nettles, and other rank herbage. In 1903 I first noticed its presence on May 17, and in 1904 on May 29; but in 1905 I discovered a nest with four eggs on May 21. The breeding birds sit very close, and may sometimes be captured with the hand.

27. ACROCEPHALUS PHRAGMITIS (Bechst.). *Sedge-Warbler.*

Abundant in summer in the wet pastures on the fringe of the Kara Su swamp.

28. ACCENTOR MODULARIS (L.). *Hedge-Sparrow.*

On the 3rd and 14th of November, 1903, I observed a single specimen in the kitchen-gardens. In the following year a Hedge-Sparrow haunted a sheltered spot near the town from the 13th to the 16th of March, and on the latter date I came across another in a different locality.

29. Acredula caudata (L.). *Long-tailed Tit.*

30. Acredula caudata europæa (Herm.).

31. Acredula caudata macedonica Salvad. & Dresser. *Macedonian Long-tailed Tit.*

Long-tailed Tits are fairly abundant in the wooded valleys and coppices, descending to the plains in winter. Mr. Othmar Reiser, of the Landesmuseum, Sarajevo, who has kindly examined my small series of specimens, refers them to the varieties enumerated above. I should say that the white-headed type is the least common.

32. Parus major L. *Great Tit.*

Resident, and the most abundant member of the genus.

33. Parus lugubris Natt. *Sombre Tit.*

One observed at Bukovo, March 29, 1903.

34. Parus cæruleus L. *Blue Tit.*

Fairly abundant, but much less so than the Great Tit. In winter flights of thirty or forty may be seen in the plain.

35. Ægithalus pendulinus (L.). *Penduline Tit.*

Seems to arrive about the end of April and nests in small numbers among the willows bordering the lower course of the Dragor and other streams in the plain. The specimens obtained are peculiarly vivid in colour compared with others from the Dobrudja and Southern Russia, the white on the head being very pure and the chestnut on the wing extremely rich. At Monastir, as in Bulgaria, this bird is called by the equivalent of "Water Nightingale."

36. Sitta cæsia Wolf. *Nuthatch.*

Several pairs haunted the beech-grove at Bukovo. All the specimens which I examined were rather small, but in other respects presented no peculiar characteristics.

37. Certhia familiaris L. *Tree-Creeper.*

Fairly common in the wooded meadows near the town from the beginning of November till early in May. I have heard the males singing in mid-April, and presume that they retire to nest in the mountains. The specimens in my possession have been declared by Herr Reiser to belong to the variety *C. brachydactyla.*

38. TROGLODYTES PARVULUS Koch. *Wren.*

Common and resident, but more numerous in the plain during the winter months.

39. MOTACILLA ALBA L. *White Wagtail.*

Not very abundant in the low ground except in winter, when it assembles in small troops. It breeds in the mountain valleys, and a certain number appear to pass southwards in the third week of September.

40. MOTACILLA MELANOPE Pall. *Grey Wagtail.*

Appears to keep strictly to the high-lying ground during summer, descending in September to the plain, where, until the first week in February, it may be observed everywhere near running water, even in the centre of the town, where it associates with the Dippers. On February 3, 1904, I surprised eight Grey Wagtails which had apparently found sleeping-quarters in a bunch of dry herbage under the overhanging edge of a ditch.

41. MOTACILLA FLAVA L. *Blue-headed Wagtail.*

I have never seen this bird in the plain except in August and September, when it appears in small flocks; but it seems to breed in the cooler valleys.

42. MOTACILLA MELANOCEPHALA Licht. *Black-headed Wagtail.*

Very abundant in the neighbourhood of the marshes, arriving early in May. A specimen which a friend picked up exhausted on May 9, 1904, made a charming cage-bird.

43. ANTHUS PRATENSIS (L.). *Meadow-Pipit.*

The Meadow-Pipit has come under my notice very seldom, and never in summer. On April 24, 1903, I saw a flock in a ploughed field, and the birds were numerous on September 22 and 25 of the same year, a few being occasionally seen till November 25.

44. Anthus trivialis (L.). *Tree-Pipit.*

So far as I am aware, the Tree-Pipit is only to be met with as a migrant in April and May, returning in October.

45. Anthus spipoletta (L.). *Water-Pipit.*

Very abundant in the rocky gorges of Peristeri in summer, descending in winter to within a short distance of Monastir.

46. Anthus campestris (L.). *Tawny Pipit.*

Is to be found in the drier and more barren parts of the plain, but does not seem numerous. I only once saw a pair on the higher level of Brusnik—in July, 1904.

47. Oriolus galbula L. *Golden Oriole.*

Arrives in mid-April and breeds in considerable numbers, shewing no aversion to the vicinity of human habitations. The autumn migration is at its height about August 27, when many individuals fall victims to local gunners.

48. Lanius excubitor L. *Great Grey Shrike.*

Observed in the plain on September 27, November 24, and December 13, 1904.

49. Lanius minor Gm. *Lesser Grey Shrike.*

Arrives in the first week of May and is fairly abundant everywhere till August. A nestling which I kept for some time assumed the black frontal stripe in December.

50. Lanius collurio L. *Red-backed Shrike.*

One of the most abundant, conspicuous, and widely distributed summer visitors, arriving between the 20th and 24th of April. It seems to nest by preference in the tangled hedges and thickets dear to the Whitethroat, but is also seen in numbers in the mountain-gorges 1000 feet above Monastir. I have never found anything but insects in the stomach.

51. Lanius pomarinus Sparrm. *Woodchat.*

The only specimen which I ever saw was a handsome male observed on April 26, 1904, when I had unfortunately left my gun behind me.

52. MUSCICAPA GRISOLA L. *Spotted Flycatcher.*

This species does not seem to remain to nest and is much more conspicuous in autumn than in spring. It arrives on the 27th or 28th of April and is seen again about August 27, the southward movement being noticeable in 1903 till as late as November 11; but I observed the greatest numbers about September 27.

53. MUSCICAPA ATRICAPILLA L. *Pied Flycatcher.*

In 1903 I first saw Pied Flycatchers on April 19, after a stormy night. They were accompanied by many of the Collared species and simply swarmed in the pollard willows. On the following day their numbers had increased, and then only a few were seen till the 29th and 30th, when a still greater rush was observed. After that date I saw none, nor did there appear to be an autumn migration. In 1904 the first arrivals were observed on April 4, and the greatest numbers on April 28, from which date I made constant observations till May 7. I have no record of an autumn migration for 1904, but on the 3rd of December, when winter had already set in, I shot an adult male which I preserved.

54. MUSCICAPA COLLARIS Bechst. *Collared Flycatcher.*

Arrives simultaneously with the preceding species, but in smaller numbers. I observed no autumn migration.

55. HIRUNDO RUSTICA L. *Swallow.*

In 1903 the first Swallows appeared on March 29, and early in July the young were being fed on the wing. The local birds disappeared about the end of September and a week later large flights passed through, sometimes getting entangled among the trees after sundown. In 1904 no Swallows were observed till April 10.

56. CHELIDON URBICA (L.). *House-Martin.*

A large colony nests in the barracks, but I noticed few elsewhere. The date of arrival was April 19–20, and that of departure about September 8, after which there was a considerable migration from the north until September 29.

57. Cotile rupestris (Scop.). *Cliff-Swallow.*

On the 2nd and 4th of April, 1904, I watched half a dozen Cliff-Swallows flitting backwards and forwards along a rocky slope overhanging the Resna road, but I could never ascertain whether they remained to nest.

58. Carduelis elegans Steph. *Goldfinch.*

Extremely abundant all the year round, forming immense flocks in winter.

59. Chrysomitris spinus (L.). *Siskin.*

Only on one occasion—March 23, 1903—did I see a small flight of both sexes sunning themselves in some trees near the town.

60. Serinus hortulanus Koch. *Serin.*

On November 23, 1903, I saw six Serins in a garden near the station, and on March, 13, 1904, two or three below Lakhtsé. On the 16th of March, 1905, I noticed a solitary individual at Bukovo.

In connection with this species I may quote the following from my diary of April 19, 1904, for the benefit of future observers:—"Among a flock of Goldfinches feeding in a vineyard I observed a small bird strongly resembling the Serin, but I was struck by its brilliant and pure yellow colour, which became more rich and golden about the head, reminding me of the description of *Serinus syriacus.*"

61. Ligurinus chloris (L.). *Greenfinch.*

Apparently not common. On March 24, 1903, I observed a few individuals near St. Christopher, and on April 19 of the following year three in a garden near the railway-station.

62. Coccothraustes vulgaris Pall. *Hawfinch.*

On March 29, 1904, I saw three or four examples at Bukovo, and subsequently I received a live bird caught near the town.

63. Passer domesticus (L.). *House-Sparrow.*

Common and resident, especially in the town, but less numerous than the Tree-Sparrow.

64. Passer montanus (L.). *Tree-Sparrow.*

Common and resident, more abundant in the town than the preceding species and still more so in the country. Its favourite nesting-place is a somewhat decayed pollard willow. I observed several cases of albinism, and secured one specimen with a white head. *Passer salicicola* is found at various points on the railway between Monastir and Salonika, but I have never seen it in the Monastir plain.

65. FRINGILLA CŒLEBS L. *Chaffinch.*

Fairly common in the woods on the mountain-slopes, particularly in the beech-grove at Bukovo. I have not seen it in the plain except in winter.

66. LINOTA CANNABINA (L.). *Linnet.*

Resident and fairly common. I saw many on the high slopes of Peristeri in June, 1904, and it is abundant on the plain in winter.

67. EMBERIZA MILIARIA L. *Corn-Bunting.*

The commonest of all the Buntings. I doubt whether it ever leaves the district entirely, but in the first week of February it appears in flocks of hundreds and during the summer every bush seems to have its Bunting. The majority disappear in September.

68. EMBERIZA MELANOCEPHALA Scop. *Black-headed Bunting.*

Although this bird is conspicuous and fairly abundant in suitable localities, such as the neighbourhood of sunny vineyards, I have never noticed it till late in May, and I have no notes as to the date of its departure.

69. EMBERIZA CITRINELLA L. *Yellowhammer.*

Resident, but less abundant than the Corn-Bunting, and seldom seen in the plain except in winter, when it associates with flocks of Chaffinches.

70. EMBERIZA CIRLUS L. *Cirl Bunting.*

Twice observed at Smolevo in 1903, six birds among the bushes on December 16, and a few (perhaps the same) on December 25. In 1904 I saw several at the same spot on January 9, April 5, and April 25.

71. Emberiza hortulana L. *Ortolan.*

Arrives between the 15th and 18th of April, and nests in fair numbers in the vineyards. Seems to leave about the first week in August. It is very quarrelsome.

72. Emberiza cia L. *Meadow-Bunting.*

Never seen in a meadow. As in Bulgaria, these birds seem to prefer low bushes on dry hill-sides well sheltered from the wind and they are very sluggish. In 1903, on November 8th, I observed two at Smolevo, while others came under my notice on the 15th and 24th of the same month near the town. On February 22, 1904, I saw a pair at St. Christopher.

73. Emberiza schœniclus (L.). *Reed-Bunting.*

Abundant in the marshes in winter. It seems to have escaped my notice in summer, but is presumably resident.

74. Alauda arvensis L. *Skylark.*

Fairly common throughout the year.

75. Alauda arborea L. *Woodlark.*

In 1903 I shot two on November 3, and in April of the two following years I saw a few specimens.

76. Alauda cristata L. *Crested Lark.*

A common resident, frequenting the roads and open spaces even in the town. On one occasion I heard a House-Sparrow imitate the song of this bird so exactly that a Crested Lark responded and the duet lasted for some time.

77. Sturnus vulgaris L. *Starling.*

Abundant. The Starlings frequent the town exclusively during the nesting-season, taking up their quarters there towards the middle of March. As soon as the young are able to fly they are taken to feed on the mulberry-trees, and later on into the water-meadows and kitchen-gardens. The winter is spent in the plain and the marshes, where huge flights may be met with till February.

78. Pyrrhocorax alpinus Vieill. *Alpine Chough.*

I observed a small colony among the crags on Peristeri in July, 1904.

79. Garrulus glandarius (L.). *Jay.*

Fairly common, especially in the oak-woods several hundred feet above the plain, descending to within a short distance of the town in winter, but always frequenting the neighbourhood of oak trees.

80. Pica rustica (Scop.). *Magpie.*

A permanent and too common resident, often seen in flocks of sixty or more. Enormous numbers roost in the tall poplars bordering the lower reaches of the Dragor.

81. Corvus monedula Linn. *Jackdaw.*

A permanent and abundant resident in the town, breeding in thousands under the roof-tiles. The Jackdaws assemble regularly every afternoon to manœuvre in the plain, when the uproar is deafening and the sky is literally darkened by their numbers. Partial albinism occasionally occurs.

82. Corvus cornix L. *Grey Crow.*

From November to March the Hoodie haunts the plain and the outskirts of the town in great numbers, finding abundance of food near the barracks and slaughter-houses and sharing the Magpies' roosting-quarters in the poplars. A very few remain to breed in the plain, the majority apparently seeking the cooler mountain-gorges for that purpose. They display great animosity towards all Birds-of-Prey, and I have noticed them alight on the topmost branches of a tree and break off twigs which they let fall in order to annoy or drive out a Hawk that had sought refuge among the lower branches. My attention was first drawn to this habit on the occasion of an onslaught by several of these birds on a Goshawk which I was training.

83. Corvus corax L. *Raven.*

Except during an excursion to Peristeri, when I saw a pair of Ravens—on the 30th June, 1904,—I observed this bird only seven times: always between the months of September and April.

84. Corvus frugilegus L. *Rook.*

Common from October till March, when it disappears.

85. Cypselus apus (L.). *Swift.*

By no means common as a summer visitor, but observed in some numbers on migration in autumn.

86. Cypselus melba (L.). *Alpine Swift.*

Fairly common, practically taking the place of the Common Swift. It nests in the minarets of the town, and is abundant in the villages, where the only conceivable breeding-places are hollow tree-trunks. The earliest date of observation was April 30, 1904, and I saw a large flight in the mountains on September 21.

87. Caprimulgus europæus L. *Nightjar.*

Observed regularly during the summer.

88. Dendrocopus lilfordi Sharpe & Dresser. *Lilford's Woodpecker.*

The environs of Monastir are not of a nature to attract Woodpeckers, but on October 28, 1903, I was fortunate enough to secure a fine specimen of this species in a wooded meadow close to the town. I have on two subsequent occasions heard what I took to be the call of Lilford's Woodpecker.

89. Gecinus viridis (L.). *Green Woodpecker.*

On March 22, 1904, while inspecting the ruined village of Ghiavat on the Resna road, I saw a Green Woodpecker among the elms in the churchyard.

90. Alcedo ispida L. *Kingfisher.*

Only twice observed, on both occasions in winter.

91. Coracias garrulus L. *Roller.*

Arrives about the beginning of May and, although not very common, is always to be seen where there are suitable nesting-places.

92. Merops apiaster L. *Bee-eater.*

In 1904 a small flock passed over my house on May 9, and on May 15 I saw another flock, mingled with Alpine Swifts, over the parade-ground. In 1905 I saw a few in May.

93. UPUPA EPOPS L. *Hoopoe.*

Common from the end of March till September, nesting principally in mud walls. The native name is "Putput." I have seen a Hoopoe attack a Stork which had approached its nesting-place.

94. CUCULUS CANORUS L. *Cuckoo.*

Arrives between the 8th and 15th of April and is widely distributed. Many birds of the year were on passage on August 28, 1903.

95. CARINE NOCTUA (Scop.). *Little Owl.*

Not very common, but may be observed all the year round.

96. SYRNIUM ALUCO (L.). *Tawny Owl.*

On March 30, 1904, I saw an individual being mobbed by thousands of Jackdaws. The decayed willow from which I dislodged it was surrounded by castings.

97. GYPS FULVUS (Gm.). *Griffon Vulture.*

Fairly common, but I could not ascertain where it breeds.

98. VULTUR MONACHUS L. *Cinereous Vulture.*

I fancy that I identified this Vulture on two or three occasions, but should not like to say so positively.

99. NEOPHRON PERCNOPTERUS (L.). *Egyptian Vulture.*

Very few individuals were observed and these all adults. In June, 1904, I observed a pair high up on Peristeri, where they doubtless breed.

100. GYPAËTUS BARBATUS (L.). *Bearded Vulture.*

On March 16, 1904, I had an opportunity of watching at my leisure a fine adult specimen which was beating over the mountain-slope near the village of Lakhtsé, having presumably wandered from the rugged heights of Peristeri.

101. CIRCUS ÆRUGINOSUS (L.). *Marsh-Harrier.*

Resident, but more frequently seen in winter.

102. CIRCUS CYANEUS (L.). *Hen-Harrier.*

Apparently generally distributed in the neighbourhood from the end of September till the end of March. The latest date noted of its occurrence in spring was April 3, 1904, when I saw a pair.

103. Buteo vulgaris Leach. *Common Buzzard.*

The Buzzard is met with all the year round; in fact, it is difficult to spend a couple of hours in the open without seeing one or two individuals, especially in the plain, where several pairs nest in the tall trees. In December, January, and February the numbers seem to increase and four or five pairs may be seen close together.

104. Aquila clanga Pall. *Spotted Eagle.*

Not rare. On May 11, 1905, I took two eggs from a nest in a beech tree at Bukovo.

105. Aquila heliaca Sav. *Imperial Eagle.*

Common and nests in the plain.

106. Aquila chrysaëtus (L.). *Golden Eagle.*

Only once observed.

107. Astur palumbarius (L.). *Goshawk.*

Not very common, but nests regularly in suitable localities.

108. Accipiter nisus (L.). *Sparrow-Hawk.*

Abundant and resident.

109. Milvus ictinus (Savigny). *Common Kite.*

Several pairs nest near the town and I have frequently seen Kites in the mountains; but, as the earliest date on which I have noticed one of these birds was February 13, I conclude that they spend the winter elsewhere.

110. Falco æsalon (Tunst.). *Merlin.*

A single individual was observed at Ekshi Su on December 15, 1903.

111. Falco subbuteo L. *Hobby.*

I noticed a Hobby on the 24th of April, 1904, but the majority do not appear till May 18–20. They breed in fair numbers, both in the immediate vicinity of the town and in the high valleys.

112. FALCO TINNUNCULUS L. *Kestrel.*

Common all the year round. Devours quantities of lizards.

113. FALCO CENCHRIS Naum. *Lesser Kestrel.*

These Kestrels put in an appearance in the first week of April, and a week later the work of upholstering their nests under the tiled roofs is in full swing. They are a characteristic feature of the town during the summer, and their graceful flight and soft cry combine to render them peculiarly attractive.

114. PHALACROCORAX PYGMÆUS (Pall.). *Pygmy Comorant.*

I saw a number in the Kara Su marshes in June, 1903.

115. PELECANUS CRISPUS Bruch. *Pelican.*

Common in the Kara Su marshes. The natives use the fat of these birds for dressing wounds.

116. ARDEA CINEREA L. *Heron.*

Common all the year round. Near the town there are several large trees which are used for nesting by these birds as well as by Night-Herons.

117. ARDEA PURPUREA L. *Purple Heron.*

One or two observed on each visit to the marshes.

118. ARDEA ALBA L. *Great Egret.*

Not rare in suitable localities. As I have seen it in June, I presume that it breeds in the district.

119. NYCTICORAX GRISEUS (L.). *Night-Heron.*

Common during the summer and autumn.

120. CICONIA ALBA (L.). *White Stork.*

In 1903 I saw the first Stork on March 20, and noticed others on the following days, but it was not until the 28th that the regular colony arrived in full numbers and took possession of their nests in poplars, on house-tops, and on chimney-stacks. The natives have a great respect for the Storks, and would resent any attempt to disturb them. During the summer many individuals spend the night perched on haycocks at some distance from the town, and they are given to flying about in the moonlight.

121. CICONIA NIGRA (L.). *Black Stork.*

One individual was observed flying about in the low meadows near the town on the evening of July 30, 1905.

122. PLATALEA LEUCORODIA L. *Spoonbill.*

In summer the Spoonbill may be seen in great numbers near the Kara Su.

123. ANSER (sp. inc.).

I occasionally observed Geese during the winter, but could never identify them.

124. ANAS BOSCAS L. *Mallard.*

Common on marshy ground and in the fields near the town, where I have heard of its nesting in fairly tall willows.

125. QUERQUEDULA CIRCIA (L.). *Garganey.*

Frequently brought to market in winter.

126. NETTION CRECCA (L.). *Teal.*

Numerous in the Kara Su. I cannot vouch for its occurrence in winter.

127. COLUMBA PALUMBUS L. *Ring-Dove.*

Fairly common. It nests in the beech-woods on the mountain-slopes, and eggs are obtainable before the middle of May.

128. COLUMBA ŒNAS L. *Stock-Dove.*

A small colony frequents some precipitous rocks on the Resa road, and flights may be seen in the plain.

129. TURTUR COMMUNIS Selby. *Turtle-Dove.*

Turtle-Doves are first seen about the 19th of April in small flights of five or six, and remain till the end of September, when a considerable migratory movement is observable. They frequent ploughed land in spring, but are usually retiring in their habits.

130. TURTUR DECAOCTO (Frivaldsky). *Collared Dove.*

A permanent and characteristic resident in the town and its neighbourhood, nesting principally in tall poplars or on window-ledges. The Mussulmans provide boxes and open baskets to attract the birds to their houses, and they are as familiar as Sparrows. They breed at least twice in the season and prepare for the second brood by building what is practically a fresh nest on the top of the original structure. Troops of these Doves make excursions to the ploughed fields and threshing-floors, and I have found their nests at some distance from the town. The Collared Dove's immunity from molestation cannot be accounted for exclusively by the dryness and insipidity of its flesh, for I have seen a rough Albanian trooper risk life and limb in order to replace a young bird in its nest among the slender branches of a tall acacia.

131. CACCABIS SAXATILIS Wolf & Meyer. *Red-legged Partridge.*

Abundant at some distance from the town.

132. PERDIX CINEREA Lath. *Grey Partridge.*

Resident and breeding in fair numbers, but often decimated by severe winters.

133. COTURNIX COMMUNIS (Bonn.). *Quail.*

A certain number nest in the neighbourhood of the town, but there are no great spring- and autumn-flights, and a bag of a dozen is considered good.

134. RALLUS AQUATICUS L. *Water-Rail.*

A live specimen was brought to me in March, 1904.

135. CREX PRATENSIS Bechst. *Corn-Crake.*

Evidently not common. On the 29th and 30th of April, 1904, I heard the Corn-Crake in some fields near the town.

136. ORTYGOMETRA PORZANA (L.).

On April 25, 1905, a peasant brought me a live specimen, which he declared he had caught in a tree near the town!

137. GALLINULA CHLOROPUS (L.). *Waterhen.*

I saw a few at Kara Su in June, 1903, and on October 6 of the same year a young bird caught in a vineyard near Monastir was brought to me.

138. Fulica atra L. *Coot.*

Breeds in great numbers in the Kara Su marshes.

139. Grus communis Bechst. *Common Crane.*

Immense flights of Cranes pass northwards in spring, my earliest record being March 22. They remain in the marshes for some time, being still numerous in May and June, and their eggs have been described to me by the marshmen. The autumnal migration south is first noticeable about September 27.

140. Vanellus vulgaris Bechst. *Lapwing.*

Very abundant in the plain from November till February. I imagine that they breed near the Kara Su, but their numbers diminish in summer.

141. Himantopus candidus Bonnat. *Stilt.*

I have seen the Stilt early in May, and during the summer it abounds in the marshes. I have always observed it flying in pairs and have noticed that the call is a sort of falsetto grunt.

142. Scolopax rusticula L. *Woodcock.*

Not common. A few are to be obtained in December and January.

143. Gallinago cœlestis (Frenzel). *Common Snipe.*

Fairly common from November till March.

144. Totanus ochropus (L.). *Green Sandpiper.*

A specimen shot in the neighbourhood was given to me on November 24, 1903.

145. Totanus hypoleucus (L.). *Common Sandpiper.*

Very rarely seen.

146. Hydrochelidon nigra (L.). *Black Tern.*

Thousands breed in the marshes, where I first noticed them on May 16, 1904.

147. Hydrochelidon leucoptera (Schinz). *White-winged Tern.*

Inhabits the same localities as the preceding species, but is less numerous.

148. Sterna (sp. inc.). *Tern.*

I saw many White Terns in the Kara Su marsh, but could not identify them to my satisfaction.

149. Larus canus L. *Common Gull.*

On January 12, 1904, during very cold and stormy weather, a large flock arrived, which remained till February 12, when it disappeared, probably returning to the sea—at least 150 kilometres distant—by easy stages, as on the 28th I saw numbers on the Lake of Ostrovo, halfway between Monastir and Salonika. During their stay the birds haunted the slaughter-houses and kitchen-gardens, winging their way towards the Kara Su marshes at sundown. All were in immature plumage, so far as I could observe.

150. Larus ridibundus L. *Black-headed Gull.*

The flock of Common Gulls referred to above was accompanied by about forty Black-headed Gulls in winter plumage. There must have been about three hundred Gulls in all, and they disappeared at the same time. The natives assured me that the occurrence was not an unusual one in severe winters.

151. Podicipes cristatus L. *Crested Grebe.*

On May 30, 1904, a Bulgar brought me a live male, which he had picked up in a field close to the town.

152. Podicipes fluviatilis (Tunst.). *Dabchick.*

On May 16, 1904, I found an egg in the marsh which I feel sure belonged to a bird of this species.

XVI.—*On some Birds collected by Mr. Douglas Carruthers in the Syrian Desert.* By P. L. Sclater, D.Sc., F.R.S.

(Plate XV.)

Mr. Douglas Carruthers, having finished his engagement at the Syrian Protestant College at Beyrout (see 'Ibis,' 1904, p. 310, and 1905, p. 296), arranged with a friend, Mr. J. H. Miller, to make an excursion into the Syrian

Desert beyond Damascus. for the purpose of collecting specimens of the mammals and birds of that little-known district.

They went from Beyrout to Damascus by railway, on February 15th, 1905, and on the 18th made a short excursion to Hejana, a small village about four hours' drive from Damascus, situated at the edge of the desert, but surrounded by cultivated land. Here they stayed nearly a week collecting birds (which included *Saxicola finschi*, *Linota cannabina*, &c.) and hunting gazelles in the desert; after which they returned to Damascus.

On the 28th of February, Messrs. Carruthers and Miller made a fresh start from Damascus with a covered cart and two horses for Kuryatein, on the route to Palmyra, and arrived at Kutifeh the same day, and at Deir-Stiyeh on March 1st. Here they camped outside the village, and on March 2nd reached Kuryatein, where they stayed in the house of Pastor Prip—a missionary resident there.

Kuryatein (*Coradæa*) is situated at the western end of a broad valley which leads due east to Palmyra, about 40 miles distant, and from its numerous springs and consequent fertility is characterized in Murray's Handbook as "a paradise in the midst of a dreary waste." At Kuryatein and in the district around the travellers stayed about six weeks, and the greater part of their collection of birds, as will be seen from the list, was formed in that region. An excursion to Palmyra was planned, and that famous spot was reached on the 14th of March, but the travellers being unprovided with proper passports were not allowed to remain. Many smaller excursions were also made from Kuryatein into the surrounding hills, where good sport was obtained with gazelles and the ibex (*Capra sinaitica*). Of the latter, five were shot in one day, so that they appear to be still abundant in the district.

On April 11th, walking along under the "great white cliff" near the springs at Jebar five hours from Kuryatein, Mr. Carruthers says (in his journal) :—"Here was a paradise of bird-life—Kestrels in dozens, Ibises, Rock-

Pigeons, Egyptian Vultures, Kites, Alpine Swifts, and Saker Falcons. A wonderful sight it was, all these birds wheeling about in the air, and not one leaving the neighbourhood, as all were nesting."

Finally leaving Kuryatein on April 15th the travellers reached Nebk in the afternoon of the next day, and Damascus (*viâ* Kutifeh) on the 19th of April.

After a short stay in Damascus, Mr. Carruthers and his friend paid a visit to Petra, which is now easily reached by the new Hedjaz Railway to M'aán, designed ultimately to go on to Mecca. From M'aán donkeys conveyed them to Petra in about six hours. A few birds were obtained there, *Agrobates galactodes*, *Amydrus tristrami*, and *Carpodacus sinaiticus*.

During their three months' absence from Beirut, Messrs. Carruthers and Miller collected 155 specimens of mammals and birds. Of these the first offer was naturally made to the American College at Beirut, where Prof. Day selected 43 specimens for the Museum. The remainder were brought to England and were acquired by the British Museum. Of these, 87 were birds, which, by the kind permission of the authorities of that Institution, I have been able to examine and of which I now propose to give an account.

I regret exceedingly that I was absent from England when Mr. Carruthers returned from Syria, and that he had left this country to go on the Ruwenzori Expedition (see above, p. 222) before I came back, so that I was not able to meet him, and get him to write some field-notes, which would have added greatly to the value of the present paper. But the great Syrian Desert is so little explored that I think it advisable to publish a complete list of the species of which examples were obtained by Messrs. Carruthers and Miller, although they have been, of course, mostly enumerated by Canon Tristram in his standard work on the 'Fauna and Flora of Palestine.'

The 87 skins from the Syrian Desert acquired by the British Museum are referable to 43 species, all of which save 4 are mentioned in Canon Tristram's work. These four additions are *Pyrrhocorax graculus, Geronticus comatus, Machetes pugnax,* and *Emberiza citriniventris,* the last-named being, as I believe, new to science. It is right to add that all Mr. Carruthers's skins are well made and in excellent condition, and are properly labelled with the exact date and locality, and the colours of the soft parts.

There is still more good work in Ornithology to be done in the Syrian Desert, and I hope that among our young and enterprising members some one may be found to continue Mr. Carruthers's explorations. With two railways running from the Mediterranean to Damascus the Syrian Desert is very easy of access.

Mr. Carruthers's father, the Rev. W. Mitchell-Carruthers, of Holbrook Rectory, Ipswich, has most kindly lent me his son's journal, from which I have extracted the particulars above given as to his journey and the field-notes relating to some of the species. I wish to offer Mr. Mitchell-Carruthers my sincere thanks for this favour, without which I could hardly have ventured to prepare this paper.

I now proceed to the list of species, adding references to Canon Tristram's work.

1. SAXICOLA ŒNANTHE.

Saxicola œnanthe Tristr., Fauna and Flora of Palestine, p. 32.

a. ♂. Kuryatein, 27.3.05; *b.* ♀. 5.4.05.

2. SAXICOLA ISABELLINA.

Saxicola isabellina Tristr., op. cit. p. 34.

a. ♂. Hejana, east of Damascus (2000 ft.), 13.2.05; *b.* ♂. Kuryatein, 4.4.05.

3. SAXICOLA MELANOLEUCA.

Saxicola melanoleuca Tristr., op. cit. p. 33; Dresser, B. of E. i. pl. xxvi.

Kuryatein: *a.* ♀. 31.3.05; *b.* ♂. 1.4.05; *c.* ♂ jr. 3.4.05; *d.* ♂. 4.4.05; *e.* ♂. 6.4.05.

4. SAXICOLA FINSCHI.

Saxicola finschi Tristr., op. cit. p. 34.

a. ♂. Hejana, 18.2.05; *b, c*. ♀ ♀. 20.2.05.

5. SAXICOLA MŒSTA.

Saxicola mœsta Tristr., op. cit. p. 34.

a. ♂ (ad.); *b*. ♂ (jr.); *c*. (jr.); Kuryatein, 11.4.05.

6. SAXICOLA LUGENS.

Saxicola lugens Tristr., op. cit. p. 34.

a. ♀. Kuryatein, 24.3.05.

7. SAXICOLA LEUCOMELA.

Saxicola leucomela Tristr., op. cit. p. 35.

Kuryatein: *a*. ♂. 23.3.05; *b*. ♀. 27.3.05; *c*. ♀. 31.3.05.

8. PRATINCOLA RUBETRA.

Pratincola rubetra Tristr., op. cit. p. 36.

a. ♂. *b*. ♀. Kuryatein, 30.4.05.

The male bird is in beautiful breeding-dress.

9. RUTICILLA MESOLEUCA.

Ruticilla mesoleuca Tristr., op. cit. p. 37.

♂. Kuryatein, 2.2.05.

This specimen has a large white wing-patch, as shown in Dresser's figure (B. of E. i. pl. xlii.). But I have seen others (from Constantinople) with the patch much reduced in size, and clearly intermediate between the typical form and *R. phœnicurus*.

10. CYANECULA SUECICA.

Cyanecula suecica Tristr., op. cit. p. 25.

a. ♂. Kuryatein, 20.3.05; *b*. ♀ jr. Kuryatein, 5.4.05.

Following Canon Tristram, I refer two of the Blue-throats to the Red-spotted *Cyanecula suecica*, and two to the White-spotted *C. wolfi*. But I confess that I am a little sceptical respecting the propriety of separating these two forms as species. At any rate, in Palestine, as in Egypt, both forms seem to occur in the same districts in the winter months.

11. CYANECULA WOLFI.

Cyanecula wolfi Tristr., op. cit. p. 38.

a. ♂, *b*. ♂. Kuryatein, 20.3.05.

12. COSSYPHA GUTTURALIS.

Erithacus gutturalis Tristr., op. cit. p. 30, pl. vii.

Cossypha gutturalis Dresser, Man. Pal. B. p. 68.

a. ♂. Kuryatein, 2.3.05.

A single specimen of this beautiful bird, which appears to me to be best placed in the genus *Cossypha.*

13. AGROBATES GALACTODES.

Aëdon galactodes Tristr., op. cit. p. 46.

Agrobates galactodes Sharpe, Hand-l. iv. p. 185 (1903).

a. Petra, 1.5.05.

Petra is far away from the main Syrian Desert on the confines of Arabia. Mr. Carruthers got a few birds there at the beginning of May, during the short excursion from Damascus already referred to, and I think it worth while to mention them, as no other ornithologist, so far as I know, has ever visited that celebrated place.

14. MOTACILLA FLAVA.

Motacilla flava Tristr., op. cit. p. 55.

Kuryatein: *a, b.* ♂, *c.* ♀. 5.4.05; *d, e.* 7.4.05.

15. MOTACILLA MELANOCEPHALA.

Motacilla melanocephala Tristr., op. cit. p. 55.

a. Kuryatein, 27.3.05.

This is a fine bird in full plumage, with the cap intensely black.

16. ANTHUS CERVINUS.

Anthus cervinus Tristr., op. cit. p. 56.

Kuryatein: *a.* ♂. 20.3.05; *b.* ♂, *c.* ♀. 30.3.05.

The two cock birds of this species are apparently in full plumage with bright rufous throats.

17. LINOTA CANNABINA.

Linota cannabina Tristr., op. cit. p. 70.

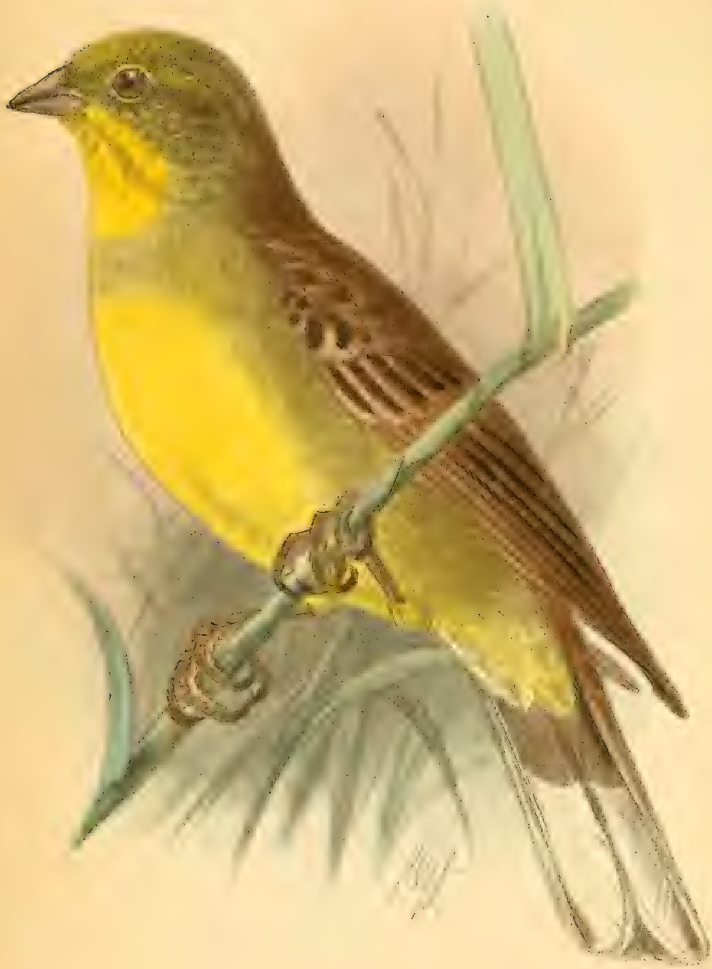
a. ♂. Hejana, 20.2.05.

This is a fine adult male in brilliant plumage.

18. CARPODACUS SINAITICUS.

Carpodacus sinaiticus Tristr., op. cit. p. 7.

a. ♂. Petra, 19.5.05. Bill dull yellow; feet light brown; iris light yellow.



Bale & Danielsson, Ld imp.

[illegible]A CITRINIVENTRIS.

We might well expect to find this scarce bird at Petra, which is far on the way to the Sinaitic Peninsula. Canon Tristram met with it in the desert south of the Dead Sea.

The feet of the single specimen, which is a male in full plumage, are noted "light brown," the bill "dull yellow," and the iris "dark hazel."

19. EMBERIZA CITRINIVENTRIS. (Plate XV.)

Emberiza citriniventris Scl. Bull. B. O. C. xvi. p. 39 (Dec. 13th, 1905).

Suprà cinerea, pileo flavicante tincto: loris et oculorum ambitu flavescentibus: interscapulio brunneo striolato: alis nigrescentibus, primariis angustè, secundariis latè fulvo marginatis: caudâ nigricante, rectricibus utrinque duabus externis albo latè terminatis: subtus pallidè citrino-flava, gulæ lateribus, pectore et hypochondriis cinereo perfusis; subalaribus albidis, campterio flavo tincto, remigum paginâ inferiore pallidè cinerea: rostro (in ave viva) obscuro; pedibus pallidè brunneis: long. tota 6·0, alæ 3·7, caudæ 3·0 (poll. et dec.).

Hab. in deserto Syriaco.

Obs. *E. cinereæ* quod formam omnino similis, sed ventre flavo distinguenda.

A single specimen of this apparently new Bunting was obtained by Mr. Carruthers near Kuryatein on April 8th, 1905. It is labelled "Male: no. 35: bill and feet dusky." Mr. Carruthers was inclined to refer it to the *Emberiza cinerea* of Strickland, but it seems to be easily distinguishable from that species by its yellow belly (see the figures of *E. cinerea* in Dresser's 'Birds of Europe,' iv. pl. 207, and in Jardine's 'Memoir of Strickland,' pl. vi. p. clxiii).—In the British Museum there are three skins of an *Emberiza* from Bushire on the Persian Gulf which I believe to be referable to the female of this species. Two of these were obtained by Mr. W. D. Cumming and one by Mr. A. J. V. Palmer. It is quite likely that the range of the present bird extends into Mesopotamia and down the valley of the Euphrates to the Persian Gulf.

It is curious that no ornithological traveller, so far as I know, has ever been into Mesopotamia, which is easy of access from either side. The would-be explorer should start early in the year from Bagdad, and come out in the late spring by the Syrian Desert. This expedition would be full of novelty and of great interest in many ways.

20. AMYDRUS TRISTRAMI.

Amydrus tristrami Tristr., op. cit. p. 74, pl. xi.

a. ♂. Petra, 30.4.05. Bill and feet black; iris dark hazel.

This fine Rock-Starling we might well anticipate would be resident at Petra.

21. PYRRHOCORAX GRACULUS.

Pyrrhocorax graculus Dresser, Man. Pal. B. p. 445.

a, b, c. ♂s. Mountains east of Kuryatein, 1.4.05.

Canon Tristram remarks (op. cit. p. 74) that he never observed the Cornish Chough in Palestine or Syria. But there can be no question that these three specimens belong to the red-billed British species, which extends far eastwards into Kashmir and Sikkim.

22. AMMOMANES DESERTI.

Ammomanes deserti Tristr., op. cit. p. 79; Dresser B. Eur. iv. pl. 233.

a–d. ♂ ♂ ♂ ♀. Kuryatein, 24.3.05.

These birds quite agree with a Palestine specimen (Engedi, *Tristram*). I doubt whether *A. algeriensis* can be satisfactorily differentiated, even as a subspecies.

23. OTOCORYS PENICILLATA.

Otocorys penicillata Tristr., op. cit. p. 83; Dresser, B. Eur. iv. pl. 244.

O. penicillata, subsp. *O. bicornis* Sharpe, Cat. B. xiii. p. 532.

Eremophila alpestris bicornis Hart. Pal. Vög. pal. Faun. p. 263.

a. ♂, *b.* ♀. Nebk, east of Damascus, 1.3.05; *c, d.* ♂. 22.3.05; *e.* ♀. Kuryatein, 24.3.05.

The two specimens from Nebk are not so rufous above, and have the white frontal band broader. They agree with Canon Tristram's specimens from Mount Hermon. But there is much individual variation in this bird, and it can hardly be supposed that two subspecies would occur in the same limited district.

24. ATHENE GLAUX.

Athene glaux Tristr., op. cit. p. 93.

a. ♂, *b.* ♀. Kutifeh, north of Damascus, 21.2.05.

25. CIRCUS ÆRUGINOSUS.

Circus æruginosus Tristr., op. cit. p. 97.

a. ♂. Kutifeh, 7.4.05.

26. BUTEO DESERTORUM.

Buteo desertorum Tristr., op. cit. p. 98.

a. ♂. Kuryatein, 23.3.05.

Canon Tristram did not obtain a specimen of this Buzzard, though he puts it in his list as of probable occurrence. We have now an authentic record of its presence.

27. BUTEO FEROX.

Buteo ferox Tristr., op. cit. p. 98.

a. ♂. Kuryatein, 31.3.05; *b.* ♀. Kuryatein, 6.4.05.

28. AQUILA PENNATA.

Aquila pennata Tristr., op. cit. p. 100.

a. ♂. Kuryatein, 30.3.05; *b.* ♂. April.

29. CIRCAËTUS GALLICUS.

Circaëtus gallicus Tristr., op. cit. p. 101.

a, b. ♂ ♂. Kuryatein, 29.3.05.

30. MILVUS MIGRANS.

Milvus migrans Tristr., op. cit. p. 102.

a. ♂, *b.* ♀. Kuryatein, 26.3.05.

31. FALCO CENCHRIS.

Falco cenchris Tristr., op. cit. p. 106.

Kuryatein: *a.* ♂. 1.3.05; *b.* ♂, *c.* ♀. 1.4.05; *d.* ○. 11.4.05.

32. ARDEA RALLOIDES.

Ardea ralloides Tristr., op. cit. p. 110.

a. ♂. Kuryatein, 4.4.05.

33. NYCTICORAX GRISEUS.

Nycticorax griseus Tristr., op. cit. p. 111.

a. Damascus, 10.4.05.

34. GERONTICUS COMATUS.

Corvus eremita Linn. S. N. i. p. 159 (1766) ?

Comatibis eremita Rothsch., Hart., et Kleinschm. Nov. Zool. iv. p. 371.

Comatibis comata Tristr., Ibis, 1882, p. 414.

Ibis comata Dresser, B. of E. vi. pl. 408, p. 329.

Ibis eremita Dresser, Man. Pal. B. p. 586.

a. ♂, *b.* ♀. Kuryatein, 18.3.05. Bill and feet dark red; iris orange; bare head dark red, blue on the top.

"Shot flying home to the cliffs at Jebar, where they live and breed." (See above, p. 308.)

This is a new locality for an interesting bird, which, however, is known to go as far north as Biledjik on the Euphrates (*Danford*).

It does not even now seem to be quite proven that this Ibis was the *Corvus eremita* of Linnæus and extended into Europe in former days. At any rate Dr. Fatio is not convinced on the subject (see above, p. 139), so it is, perhaps, better to use the first certain name.

35. PTEROCLES ARENARIUS.

Pterocles arenarius Tristr., op. cit. p. 122.

a. ♂, *b.* ♀. Hejana, 22.2.05.

Two other species of Sand-Grouse were also met with near Kuryatein—*Pterocles alchata* and *P. senegalensis*, but no specimens of them are in this collection.

36. CACCABIS CHUKAR.

Caccabis chukar Tristr., op. cit. p. 123.

Kuryatein: *a.* ♂. 22.3.0.5; *b.* ♂, *c.* ♀. 24.3.05.

37. PORZANA BAILLONI.

Porzana bailloni Tristr., op. cit. p. 125.

Kuryatein: *a.* ♂. 4.3.05; *b.* ♀. 1.4.05.

38. ÆGIALITIS GEOFFROYI.

Ægialitis geoffroyi Tristr., op. cit. p. 129.

a. ♂. Kuryatein, 2.3.05.

This specimen is not quite adult, but obviously belongs to the present species, which is stated by Tristram to be "very common in the Southern Wilderness (of Judea) in winter."

39. ÆGIALITIS CANTIANA.

Ægialitis cantianus Tristr., op. cit. p. 130.

a. ♂. Hejana, 2.2.05; *b.* ♀. Kuryatein, 11.4.05.

40. ÆGIALITIS CURONICA.

Ægialitis curonica Tristr., op. cit. p. 130.

a. ○. Kuryatein, 11.3.05.

41. HOPLOPTERUS SPINOSUS.

Hoplopterus spinosus Tristr., op. cit. p. 131.

a. ♀. Kuryatein, 22.3.03.

42. MACHETES PUGNAX.

Machetes pugnax B. O. U. List, p. 171.

a. ♀. Hejana, 20.2.05; *b.* ♂, *c.* ♂, *d.* ♂. Kuryatein, 5.3.05.

The Ruff is not included in Canon Tristram's List, but occurs in Greece and Egypt, so would certainly pass through Palestine on its migration north.

43. TRINGA MINUTA.

Tringa minuta Tristr., op. cit. p. 133.

a. ♀. Hejana, 18.2.05.

XVII.—*On a remarkable Capercaillie* (Tetrao urogallus lugens). By Dr. EINAR LÖNNBERG, C.M.Z.S. &c.

(Plate XVI.)

LAST winter I had the pleasure of obtaining for the Swedish Royal Museum of Natural History a specimen of the Capercaillie, which roused my interest to a very high degree by its strange appearance. It came from Finland, and before long I succeeded in procuring from the same source another specimen exactly alike in size and coloration. At the same time I was informed of the existence of six similar examples, which had been shot at different times within a period of five or six years. Thus it became apparent that the aberration of these Capercaillies from the normal type meant something more than mere individual variation, so I wrote a preliminary report, which has been published in Reichenow's 'Ornithol. Monatsberichte' (Juin–Juli Hft. 1905) *, and proposed to distinguish this aberrant form by the name used above.

The writer has now been enabled to present to the readers of 'The Ibis' a very exact and satisfactory picture of the bird, which has been prepared by the skilful hands of Mr. A. Ekblom.

The description of my specimens is as follows:—

Head and neck dark ashy grey finely mottled with black; in one of the specimens the ground-colour of some of the feathers of the neck shades somewhat into brownish, but the mottling is similar to that on the other feathers. The colours of these parts are duller than in a normal Capercaillie, and they do not so plainly display a bluish hue.

The feathers of the chin and throat are blacker than the others, but with a fine grey mottling which is not found in the typical bird; on the other hand, the metallic hue of the beard of the latter is entirely lacking in the variety.

The beautiful glossy green shield on the chest of the normal Capercaillie is wanting, and is only feebly represented by narrow margins shewing some green, or rather bluish-green, gloss on the feathers, which are otherwise mottled and similar to those of the neck. These green margins are chiefly confined to the chest-region, where the shield is found in the typical Capercaillie, but it is evident that the limits cannot be so sharp.

Upper back, scapulars, wing-coverts, and secondaries reddish brown, vermiculated with black. This ground-colour is much redder than in the typical bird, and might even be termed chestnut. The outer web of the primaries is brown, but less reddish. It is a very remarkable fact that there is no white spot at the anterior margin of the wing, nor any white colour basally on the outer web of the primaries, nor are there white tips to the secondaries. The under-wing-coverts

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* "Zur Kenntniss der Variation der Auerhahns," pp. 99–103.

are not white as in the typical form; only a few of them shew some white mottlings, and the axillaries are rather dark grey (not white). The back below the interscapular region is less reddish brown and more coarsely vermiculated or marked with irregular wavy black lines. Uropygium and upper-tail-coverts similar, but (especially the latter) finely vermiculated at their tips with hoary grey. The ground-colour is brown, however, all over this dorsal region, and is thus quite different from that of the same parts in a typical Capercaillie.

Rectrices black, with fine rufous-brown mottlings, especially on the middle feathers. The characteristic white spots and mottlings which form an irregular marbled band across the tail-feathers in the normal Capercaillie are quite absent. The tips of the tail-feathers are likewise not margined with white in this bird, although some of them have a few hoary grey mottlings at the extreme edge.

Flanks not white-spotted, but brown with fine mottlings of black and posteriorly of hoary grey. Breast and belly black or dark blackish brown with very fine reddish-brown and hoary-grey mottling. Posteriorly the latter mottling dominates the brown.

Under-tail-coverts blackish with light mottlings, which at the tips of some feathers become a little coarser and more whitish. There are, however, neither there nor elsewhere on the lower parts any white-spotted feathers, and the difference from a typical Capercaillie is, therefore, very striking.

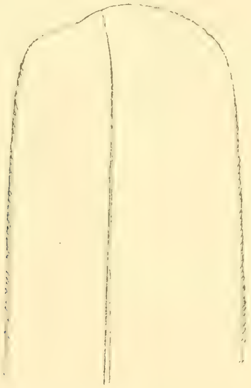
Bill rather darker than in an old Capercaillie and somewhat lead-coloured above. In the younger of my specimens the bill is somewhat blackish laterally.

This aberrant Capercaillie appears at first sight to be smaller than a male bird of the typical race. This is chiefly due to the shortness of the tail-feathers. The dimensions of my specimens are:—

	mm.	mm.
Wing	369	370
Tail	240	245
Breadth of tail-feathers	35–42	32–43
Tarsus	74	74
Culmen....................	46	46

These measurements are all a little smaller than those of the corresponding parts of a typical Swedish Capercaillie, in which the length of the wing varies from 380 to 410 mm. Thus the variety in this connexion falls only 10 mm. short of the minimum of typical specimens. With regard to the tail, however, the difference is more striking. In the typical race the length of this member is from 315 to 340 mm. The difference in breadth and shape of the single tail-feathers is just as important. The rectrices of a typical Swedish Capercaillie measure from 56 to 76 mm. in breadth and are, as is well-known, squarely truncate at their ends. Compared with this the same feathers of the variety described above are very narrow, as may be seen from the measurements quoted. The shape is shown in the figure (text-fig. 1). It will there be seen that the end of each feather is rounded, while its structure also differs from the normal, in that the inner web is not much broader than the outer.

Text-fig. 1.



End of the fifth tail-feather of *Tetrao urogallus lugens.*
(Two-thirds nat. size.)

This description is based on the two specimens which I have obtained, but I have ascertained from Mr. Merilainen, Helsingfors, that two others which he formerly possessed were quite similar. The owner of the four remaining specimens known, Mr. W. Pousar, Finland, has kindly sent me word that his birds also are similar. The only difference consists in the fact that one of his specimens has brown mottlings on the under-side of the tail-feathers and not only on the upper-side. Another specimen has (a pathological feature) a few white feathers in a single transverse series on the occiput.

The dimensions of Mr. Pousar's specimens are given by himself as follows:—

	a.	*b.*	*c.*	*d.*
	mm.	mm.	mm.	mm.
Wing	360	360	370	370
Tail	270	260	290	280
Breadth of tail-feathers	35–41	31–39	35–40	36–41
Tarsus	67	68	68	66
Culmen.................	44	46	45	46

The tail in these specimens appears to be a little longer, but otherwise the measurements agree quite well with those of my own examples.

The total length in three specimens measured by Mr. Merilainen was respectively 81, 81, and 82 cm., and the two former of these measured from tip to tip of the wings 113 and 117 cm. respectively.

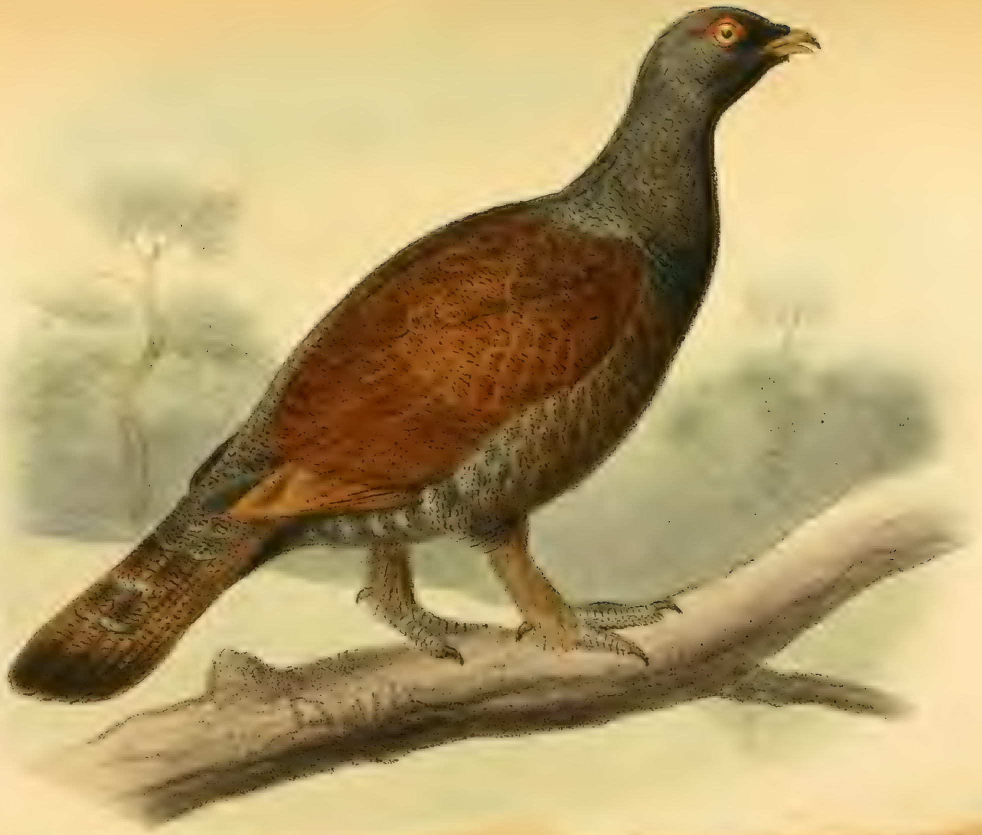
All the specimens known of this peculiar Capercaillie are males and were shot in Finland. They were all bought in the market at Helsingfors, and in consequence of this the precise locality and date could not be ascertained in every case. According to the information received, the first specimen was killed at Kajana, Central Finland, on the 7th of December, 1896. This specimen belongs to Mr. Pousar, and is that marked *a* above. One of my specimens was killed on the 11th of February, 1897, in the Government district of Uleaborg, Finland. Mr. Pousar's specimen was killed on the 26th of November, 1897, in the Government district of St. Michel in the interior of Southern Finland; specimen in December, 1898, in the Government district of Uleaborg, Finland; specimen in the same district on the

22nd of February, 1900; and, finally, my second specimen in the same district about a month earlier. The locality in which the remaining two of the eight specimens recorded were shot is unknown. In the present state of our knowledge it must be assumed that Central Finland is the home of this peculiar Capercaillie.

How many more specimens may have been killed and eaten it is of course impossible to say. It is not, however, probable that all could have fallen into the hands of persons interested in ornithology, and thus have been preserved. The females are presumably more similar to the hen of the typical Capercaillie, and therefore have as yet escaped detection. Such a conclusion may be drawn from the parallel case of the female of the hybrid between the Black Grouse and the Capercaillie, which is so seldom found and is overlooked in consequence of its likeness to its maternal parent.

It remains to try to explain the origin of this remarkable bird. It will perhaps be best at once to exclude every idea of a hybrid origin. There is not a single characteristic that could be interpreted as a result of hybridization. Not even an eventual secondary crossing between the Capercaillie and the Rackelhane, or Black Grouse–Capercaillie hybrid, would help to explain any single feature in this bird, because there is no characteristic to be found that is common to this bird and a Rackelhane. It is the more impossible as some characteristics that are common to the Capercaillie and the Rackelhane are exactly those which are missing in this bird—for instance, the white spots on the wing-margin and on the under-tail-coverts, &c. The tail of this bird is small, but it has the same general shape as that of the Capercaillie and not of the hybrid, and so on.

The specimens must therefore be of unmixed origin. It is well known that barren females of the Capercaillie assume more or less the plumage of the male. Everybody that has any knowledge of such "hahnenfedrige Auerhennen" will perceive at a glance that there is no such phenomenon in this case. The barren female is at once recognised by its small size, white-spotted feathers on the lower side, &c. It has, as a



J. Smit lith.

[illegible]

rule, a better developed glossy green shield on the chest, but usually retains here and there single typical female feathers, and so on. The birds in question can still less be interpreted as males in female plumage, or "hennenfedrige Auerhähne," as they do not possess a single female feather. The figure (Pl. XVI.) will unfailingly prove this to every ornithologist who is familiar with barren specimens of the Capercaillie which have assumed the plumage of the opposite sex.

The birds described here must consequently represent some other kind of variation. Can they be offshoots of a geographical subspecies? This might be possible, although the aberrations from the type are much greater and more important than exist, as a rule, between a geographical subspecies and the main species. This is the more striking as the birds do not appear to come from some isolated geographical area. It might, however, have happened that the specimens recorded had wandered to the places where they were shot from some other district; but, if so, whence? The only country not far distant from Finland, and at the same time somewhat isolated, is the Kola Peninsula. From that country, however, they can hardly have come, for I have a Capercaillie from that region which is quite typical and agrees with Swedish specimens. In his work on the ornithology of the Kola Peninsula, Pleske does not record any aberrations observed by himself in the case of the Capercaillie*. On the authority of others he mentions, however, that in addition to the normal Capercaillies, small forms ("kleinwüchsige Auerhühner") exist in this region, and similar reports are found in the books of the older authors, such as Pallas †, Nilsson ‡, &c. But these authors do not give the slightest hint that the "small" Capercaillies differ from the normal birds with regard to plumage. It is, however, quite out of the question that so great an aberration, with regard to plumage, shape of tail-feathers, &c., as that described above, should have escaped the keen eyes of these ornithologists, and if they had seen it they would have mentioned it. The "small" Capercaillies mentioned in such literature are not, therefore, identical with my variety, but are only dwarfish specimens of the common Capercaillie.

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* 'Uebersicht der Säugetiere und Vögel der Kola-Halbinsel: T. ii. Vögel und Nachträge.' St. Petersburg, 1886. (Beitr. zur Kenntn. des Russ. Reiches, Bd. ix.)

† Zoogr. Ross. ii.

‡ Skandinavisk Fauna, ii.

The fact that, so far as we know, this bird is not geographically isolated from the typical Capercaillie militates against a theory explaining it as a geographical subspecies. Nor does it represent the last remnant of a disappearing or vanishing race, for it is only in the last few years that it has been found in a country the avifauna of which has been well studied by ornithologists. It is something new and it is, as already mentioned, more than an individual aberration. It is evident that the number of specimens—eight in all—is too large to have been the produce of one brood *. There is also direct proof that Capercaillies of this peculiar kind have been hatched and reared more than once, because my specimen killed in the year 1897 is a distinctly older bird than that killed in 1900. There are, then, but two explanations possible: either (1) these aberrant Capercaillies have been hatched repeatedly out of eggs laid by common Capercaillies, or (2) the specimens once reared have been able to propagate, and in that event the offspring has inherited the peculiarities of their parents. Thus much at least appears to be certain, that a variety of a bird has originated suddenly, with a number of specimens all alike and all differing strikingly from the original type. This appears to be a good example of "sport," or (to use a word which in Botany, through the interesting investigations of Hugo de Vries, has become very well known) "mutation." These mutations receive distinguishing names in Botany, and I have thought it advisable to follow the custom in this case and to propose as a third name for this Capercaillie the term "*lugens,*" in consequence of its sombre colours as compared with the type. It seems to deserve a separate name, as the aberration is very thorough and at the same time constant.

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* The probable cause why, as yet, only male specimens have become known has been discussed above.

If it is asked whether the variation of *T. u. lugens* can be said to have tended in any certainly definable direction, one might venture to answer atavistic; for the male *T. u. lugens*, as it seems, is less highly specialized than the typical Capercaillie. It has not the beautiful glossy green shield of the latter, its tail is shorter, with narrower, not truncate feathers, and it lacks also the white-marbled band across its middle. The bill is less powerful and the size of the whole bird is smaller. The absence of all white markings in *T. u. lugens* might perhaps at first tempt us to think of melanism. But on further consideration such an idea must be dismissed, for, with the possible exception of the head and neck, the plumage of this variety contains less melanistic pigment than that of a typical Capercaillie. It is therefore not probable that the absence of white markings in *T. u. lugens* is due to melanistic agency, in the usual meaning of the word. The white-spotted tail-coverts may, together with the white-marbled band on the tail-feathers, serve for ornamental purpose when the Capercaillie spreads its tail during its "spel" or love-performance. The white spots on these feathers may, therefore, have been acquired as secondary sexual characteristics, and in such case their absence may be an atavistic feature. The absence of the large white spot on the anterior margin of the wing is, however, much more difficult to explain. This spot may, however, also be an ornament, as it is more strongly developed in fine old cocks than in weaker specimens.

With the sudden appearance of this *T. u. lugens* might be compared "the strange case of *Athene chiaradiæ*," described by Giglioli in 'The Ibis' for January 1903. The latter has also been regarded as a mutation or, as Giglioli terms it, a *neogenesis*. How far the cases run parallel I am not prepared to say, as I have not been able to compare *Athene chiaradiæ* with other Owls.

At the sixth International Zoological Congress in Bern last year (1901) Kleinschmidt[*] proposed to regard *Corvus corax varius* of the Faroe Islands as a mutation. As it, however, displays partial albinism in a *variable degree* in different specimens, I do not think that it can be regarded as a typical example of mutation. *Sylvia heinekeni* of Madeira, brought forward on the same occasion by the same author as another instance of mutation among birds, is by others regarded as "an instance of partial melanism"[†], or "una varieta melanica"[‡].

If the case of *Tetrao urogallus lugens* were to be ranked as a mutation in an atavistic direction, it might perhaps be regarded as a mutation in a progressive direction that the young of *Cygnus olor* in down, and again in their first plumage and then permanently, are white[§], and thus give rise to the form *C. immutabilis*. But other authors say that the characteristics of this Swan are not constant and regard it only as "a quasi-albino produced by domestication"[||].

Chrysolophus obscurus has also been regarded as a mutation, but I pass over this case as we may soon learn its full history. Dr. C. Kerbert, of the Zoological Gardens of Amsterdam, has the material for its investigation.

XVIII.—*Notes on the Parrots.* (Part IV.)

By T. SALVADORI, H.M.B.O.U.[¶]

Fam. V. PSITTACIDÆ (Cat. Birds Brit. Mus. xx. p. 137).

Subfam. NASITERNINÆ (op. cit. p. 138).

This subfamily contains only one genus, *Nasiterna*, which, according to some authors, ought to be named *Micropsitta*, a suggestion that I am not prepared to follow, as the latter name was proposed as a subgenus of *Psittacus* and not as a real genus.

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[*] According to the "Compte Rendu" of the Congress, p. 212.

[†] Cat. B. Brit. Mus. v. p. 25.

[‡] Giglioli, Manuale di Ornitol. Ital. p. 276.

[§] *Cf.* F. A. Forel, 'Le Léman,' t. iii. pp. 308–326.

[||] Cat. B. Brit. Mus. xxvii. p. 38.

[¶] Continued from p. 131.

The species have been revised by Rothschild and Hartert in their excellent "Notes on Papuan Birds" ('Novitates Zoologicæ,' viii. pp. 79–81), and also in other papers referring to the birds of the Solomon Islands. Four new species have been described since the publication of the 'Catalogue of Parrots.' Rothschild and Hartert have, moreover, published a map shewing the distribution of the genus *Nasiterna* (Nov. Zool. viii. pl. iii.), but it is incomplete, as four species from the Solomon Islands are not included, nor is the doubtful *N. orientalis* from S.E. New Guinea.

NASITERNA BRUIJNI Salvad.; Forb. & Robins. Bull. Liverp. Mus. i. p. 9 (1897); Dub. Syn. Av. i. p. 23, n. 296 (1899); Sharpe, Hand-list, ii. p. 12, n. 1 (1900); Doherty, Nov. Zool. viii. p. 56 (1901) (Kapaur); Rothsch. & Hartert, Nov. Zool. viii. p. 79 (pt. ?) (1901) (Arfak, Kapaur).

Dr. Hartert writes to me that the Ambernoh River, by some mistake, has been mentioned (Bull. B. O. C. x. p. ci, 1900) among the localities whence the Tring Museum has received individuals of this species.

NASITERNA ORIENTALIS De Vis, Ann. Rep. Brit. New Guin. 1896–97, App. p. 81 (Vanapa Valley, S.E. New Guinea) (1898); Sharpe, Hand-list, ii. p. 12, n. 2 (1900); Dub. Syn. Av. p. 1034, n. 10 (1903).

Nasiterna bruijni De Vis (nec Salvad.?), Ann. Rep. Brit. New Guin. 1888–89, p. 58 (1890) (Musgrave Range); id. Colon. Papers, n. 103, p. 107 (1890); id. Ibis, 1891, p. 28; Salvad. Mem. R. Ac. Sc. Tor. (2) xlii. p. 89 (1891).

Nasiterna bruijni orientalis Rothsch. & Hartert, Nov. Zool. viii. p. 79 (1901) (Brit. New Guinea).

In the Tring Museum there are five specimens of a *Nasiterna* from British New Guinea (Mt. Owen Stanley and Eafa district), which Rothschild and Hartert believe to belong to *N. bruijni*, so that it is very likely that the bird described by Mr. De Vis is not different from the typical North-western form. Anyhow, De Vis's description, taken from a spirit-specimen, runs as follows:—"Like *N. bruijni*, but with the two outer rectrices green and their tips orange-red and narrowly edged with yellow; sides of pileum dusky, edged with blue; green feathers on sides of breast and lower flanks very narrowly edged with black; bill horn-grey, feet brown. Length 88 mm., wing 62, tail 28, culmen 6."

It must be noticed that the orange-red tips to the lateral tail-feathers are found also in *N. bruijni*, so this is not a distinguishing character of the South-western bird.

NASITERNA PYGMÆA (Q. & G.); Forb. & Robins. Bull. Liverp. Mus. i. p. 9 (1897); Dub. Syn. Av. i. p. 23, n. 297 (1899); Sharpe, Hand-list, ii. p. 12, n. 3 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 79 (1901).

This species seems to be confined to the Berau Peninsula and the Western Papuan Islands; in the Berau Peninsula it has been found by Mr. Doherty near Kapaur on the western coast.

NASITERNA KEYENSIS Salvad.; Dub. Syn. Av. i. p. 24, n. 300 (1899); Sharpe, Hand-list, ii. p. 12, n. 6 (1900); Hartert, Nov. Zool. viii. p. 5 (1901) (Toeal and Doellah, Key I.); Rothsch. & Hartert, Nov. Zool. viii. p. 80 (1901).

NASITERNA VIRIDIFRONS Rothsch. & Hartert, Orn. MB. 1899, p. 138 (New Hanover); iid. Nov. Zool. viii. p. 80 (1901); Sharpe, Hand-list, ii. p. 12, n. 9 (1900); Dub. Syn. Av. p. 1054, n. 8 (1903).

♂ *ad.* Forehead green, crown dark blue. Sides of head greenish blue or bluish green. Quills blackish, outer webs with green, inner webs towards the base with yellowish edges. Rectrices with very long (4 mm.) bare tips of shafts ("spines"). Middle rectrices blue, the remainder of them black with bluish green outer edges, the three lateral with wide dark yellow tips to the outer webs. Under-side yellowish green, middle of abdomen orange-red; sides of belly and under-tail-coverts bright yellow. Wing 66 or 67 mm.

♀. Without the orange-red patch on the middle of the abdomen.

One pair (preserved in spirit) from New Hanover (*Webster coll.*).

This species is known only from the two typical birds mentioned by Rothschild and Hartert. It seems allied to *N. pygmæa*, from which it differs in the green forehead and dark blue crown.

NASITERNA FINSCHI Rams.; Forbes & Robins. Bull. Liverp. Mus. i. p. 9 (2 ♀, S. Cristoval, Makira) (1897); Dub. Syn. Av. i. p. 23, n. 298 (1899); Sharpe, Hand-list, ii. p. 12, n. 4 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 80 (1901).

It seems that no more individuals of this species have been procured since the discovery of the typical birds and these brought by Lieut. Richards (two formerly in Tristram's collection, now at Liverpool, and one in the British Museum).

NASITERNA AOLÆ Grant; Dub. Syn. Av. i. p. 24, n. 30 (1899); Sharpe, Hand-list, ii. p. 12, n. 7 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 80 (1901); p. 378 (1901) (♂ ♀, Guadalcanar).

NASITERNA NANINA Tristr. Ibis, 1891, p. 608 (Bugotu=Ysabel Island); Forbes & Robins. Bull. Liverp. Mus. i. no. 1, p. 9, pl. ii. f. 2 (1897) (type); Dub. Syn. Av. i. p. 24, n. 299 (1899); Sharpe, Hand-list, ii. p. 12, n. 5 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 80 (1901); p. 188 (pt.) (1901); ix. p. 589 (1902) (Ysabel I. = Bugotu).

Nasiterna aolæ nanina Rothsch. & Hartert, Nov. Zool. xii. p. 254 (Ysabel, Choiseul, and Bougainville) (1905).

At the time of the publication of the 'Catalogue of the Parrots' I was acquainted with this bird only from the description just published. I particularly noticed its diminutive size; but now we know that Dr. Hartert, having had the opportunity of examining the type of *N. nanina*, has found that it is a young bird with the wings and tail only three-quarters grown.

Rothschild and Hartert give the following description of *N. nanina* Tristr., from Ysabel:—

"♂ *ad.* Upper-side grass-green, somewhat yellower on the head; forehead yellowish green to greenish yellow, centre of crown washed with blue. (There is one feather on the crown, just above the forehead, yellow with an orange tip. Whether this is normal or not we cannot say.) Wings blackish, outer webs with narrow green edges, inner webs edged with olive-brown. Central pair of rectrices blue with black shafts; next pair of rectrices black on the inner webs, tips greenish blue, outer webs bluish green with a black patch, following pair black, broad apical portion green with a yellow spot on the inner web, the two lateral pairs with the outer web green, inner web black, apical third to fifth yellow. Under-side yellowish green, darker and purer green on the thighs and flanks; feathers of the cheeks with pale blue tips, under-tail-coverts yellow with wide green tips. Under-wing-coverts yellowish green. 'Iris pale red, feet pale bluish slate, bill dark slate-coloured.' Wing 60, tail (with free end of shaft) 28½, bare portion of shaft about 3–4½, tarsus 7½, middle toe 13, bill (end of cere to tip) 7 mm.

"♀. Like the male, but cheek-feathers orange, under-side perhaps slightly more yellowish. The markings of the rectrices vary a little, but agree essentially with those in the male. Wings 58–62 mm.

"*Hab.* Ysabel, Choiseul, and Bougainville, Solomon Islands."

To this description Rothschild and Hartert add the following remark:—"*Nasiterna nanina* is most closely allied to *N. aolæ* from Guadalcanar, from which it differs in its smaller size and (if the colours in our *N. nanina* are fully developed) in the lesser extent of the blue area on the crown and cheeks."

NASITERNA TRISTRAMI Rothsch. & Hartert.

Nasiterna nanina part., Rothsch. & Hartert, Nov. Zool. viii. p. 188 (1901) (Kulambangra).

Nasiterna tristrami Rothsch. & Hartert, Nov. Zool. ix. p. 589 (1902) (Kulambangra); Dub. Syn. Av. p. 1054, n. 9 (1903).

Nasiterna aolæ tristrami Rothsch. & Hartert, Nov. Zool. xii. p. 254 (1905) (Kulambangra, Rendova, New Georgia, and Gizo).

"Like *N. nanina,* but differs as follows:—It is much larger; the bill is longer and wider; the centre of the crown is darker and more grassy green than the rest of the head, but without any blue tinge. The *male* has narrower, much paler and less conspicuous bluish tips to the feathers of the cheeks. Wing, ♂ 66–67, ♀ 61–62; bill (end of cere to tip), ♂ 11, ♀ 8 mm.; tail 27–29½ mm." (*Rothsch. & Hartert.*)

In the description of *N. tristrami* there is no mention of the different colouring of the *female,* but on a previous occasion Rothschild and Hartert, mentioning the birds from Kulambangra, make the remark that the *females* are smaller and have the feathers of the cheeks reddish orange as in the allied species.

Hab. Solomon Islands; Kulambangra, Rendova, New Georgia, and Gizo.

The authors of this species make the additional remark that it is quite distinct from *N. finschi,* the male of which has the middle of the abdomen orange-red.

NASITERNA MISORIENSIS Salvad.; Dub. Syn. Av. i. p. 24, n. 302 (1899); Sharpe, Hand-list, ii. p. 12, n. 8 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 80 (1901).

Rothschild's collector failed to obtain specimens of this species, so that it still remains unrepresented in the Tring Museum.

NASITERNA MAFORENSIS Salvad.; Dub. Syn. Av. i. p. 24, n. 303; Sharpe, Hand-list, ii. p. 12, n. 10 (1900).

Nasiterna geelwinkiana Schleg.; Rothsch. & Hartert, Nov. Zool. viii. p. 80 (1901).

Rothschild and Hartert say that I renamed both forms of *N. geelwinkiana* Schleg., under the appellations of *misoriensis* and *maforensis,* because Schlegel's name referred to two different forms; but besides this reason there is another derived from the fact that both forms being found in the islands of Geelwink Bay, it would be always uncertain to the mind of the student for which form the name *geelwinkiana* should be used, that from Mafor or that from Misori.

NASITERNA PUSIO Sclat.; Forb. & Robins. Bull. Liverp. Mus. i. p. 9 (1897); Hartert, Nov. Zool. v. p. 531 (1898) (Sudest I.); vi. pp. 212, 216 (1899) (St. Aignan); Dub. Syn. Av. i. p. 24, n. 304 (1899); Sharpe, Hand-list, ii. p. 12, n. 11 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 81 (1901) (Duke of York Islands, New Britain, New Ireland, St. Aignan, and Sudest Islands, Fergusson, South-east New Guinea, Milne Bay, German New Guinea to Konstantinhafen).

The Tring Museum has 25 specimens of this form from the above-mentioned localities.

"The sides of the head are ochraceous. One from the Kotoi District (*Anthony Coll.*) has the sides of the head very bright orange, the blue of the crown less extended laterally than usual, the under-side more yellowish and with an orange tinge on the middle of the abdomen. This specimen is, however, very closely approached by others, and we are not, at present, able to make any subdivisions of *N. pusio.*" (*Rothsch. & Hartert.*)

NASITERNA BECCARII Salvad.; Sharpe, Hand-list, ii. p. 12, n. 12 (1900); Rothsch. & Hartert, Nov. Zool. viii. p. 81 (1901).

Nasiterna pusio, var. *beccarii* Dub. Syn. Av. i. p. 24 (1899).

"Differs from *N. pusio* in its much deeper brown cheeks and sides of the head and deeper blue crown.

"Only two specimens are known, from the western coast of Geelwink Bay between Dorey and Wandammen; one is at Genova, the other at Milan." (*Rothsch. & Hartert.*)

NASITERNA SALVADORII Rothsch. & Hartert, Nov. Zool. viii. p. 81 (1901) (Takar, Humboldt Bay, Ambernoh River).

? *Nasiterna bruijni* Rothsch. (nec Salvad.) Bull. B. O. C. x. p. ci (1900) (Ambernoh River).

"Differs from *N. pusio* in the sides of the crown being dull yellow instead of ochraceous. The blue of the crown is less bright and more greenish blue, the size smaller than that of *N. pusio.* Wing 58–63 mm." (*Rothsch. & Hartert.*)

Hab. North coast of New Guinea.

The Tring Museum has "a pair from Takar (the female with the crown duller, sides of crown more greenish), one ♀ ? from the north coast between 136° and 137° Long., four from near Humboldt Bay, and two from the lower Ambernoh River." *(Rothsch. & Hartert.)*

[To be continued.]

XIX.—*The Breeding-grounds of the Rosy Gull.*—Part II.

By S. A. Buturlin.

As stated in my former paper (*suprà*, p. 131), eggs of *Rhodostethia rosea* collected on the 26th of June were much incubated, and I had hoped to procure nestlings immediately. On the 30th of June, during a heavy snow-storm which lasted all day, I visited one of the breeding-colonies near Pokhodskoe, but the nests were deserted, though from the actions of the parents I felt sure that the newly-hatched young were not far off. Not willing, however, to disturb the birds so near my house, I proceeded, on the 1st of July, to another island, some two hundred paces in width, where I found nests of *Colymbus arcticus, Dafila acuta, Harelda glacialis*, and *Calcarius lapponicus.* The Terns' eggs were in many cases already chipped, while some of those of the Rosy Gull which had been purposely left were hatched, although the paler second clutches were but slightly incubated. I saw two young birds, but could only manage to catch one, evidently two or three days old.

Soon afterwards I left Pokhodskoe, which lies nearly in the centre of the Kolymá Delta, for the north-western portion, by the "*Chúkotskaya protóka*" (Chukche's channel) as far as the "*Cháyachya zâimka*" (Gulls' farm). Here we were clear of the *Salix*- and *Alnus*-thickets, and were on the true tundra, which afforded a welcome relief to both eyes and limbs. After the delay caused by a long and heavy snow-storm I discovered two new breeding-colonies of this Gull, one on the wet grassy border of a lake about a kilometre in diameter, the other in the middle of a somewhat larger lake, furnished with many tiny islands, spacious bogs, and shallow grassy areas. Both colonies contained from ten to twelve pairs of *Rhodostethia*, accompanied by five or six pairs of Terns, considerable numbers of *Limosa uropygialis*, *Phalaropus fulicarius*, *P. lobatus*, *Tringa maculata*, *Pavoncella pugnax*, *Harelda glacialis*, and a pair or two of *Scolopax gallinula*, *Colymbus arcticus*, *Squatarola helvetica*, *Charadrius fulvus*, and *Totanus fuscus*. *Scolopax raddei* also occurred, but not commonly, while *Anser serrirostris*, *Calcarius lapponicus*, and a few individuals of *Anser gambeli* were breeding in the immediate vicinity. I took one nest of *Somateria stelleri*, but failed to find that of *S. fischeri*, though a breeding female was killed by one of my men. In these colonies I procured seven downy young of *Rhodostethia rosea* in different stages of growth, and some young Terns, on the 6th and 7th of July.

The newly-hatched Gulls in down are some 13 or 13½ centimetres in length, but they grow quickly and measure from 18 to 20 centimetres by the time that the feathers appear on the back and flanks. Eyes dark blackish brown; legs and feet intense fleshy tinged with grey, or fleshy grey, with brownish claws; bill greyish fleshy with brownish tip. The ground-colour of the downy dress is dusty yellow, varying in tinge irrespective of growth: in some examples it is pale sulphur-yellow, in others a somewhat burnt wood-yellow, occasionally with a rusty tinge. This ground-colour is densely covered with numerous irregular and ill-defined blackish-grey markings, taking up at least as much space as the yellow ground-colour itself; they are pale and quite ill-defined on the flanks, while the middle of the breast and belly is without them and whitish—they are sharply defined and nearly black on the head, where they are narrower. The markings vary in detail in different specimens, but in all the pattern is somewhat longitudinal on the body, transverse on the nape, and wedge-shaped on the crown; this pattern is much obscured, especially on the body, as the markings are so much broken up and wavy. The sides of the throat, the eyebrows, and the down which covers the upper mandible nearly to the nostrils, are marked with dark colour.

I may add that the Terns in down correspond pretty closely with this description, but the under-side is whiter, all the throat is dark, and the legs, feet, and bill are rose-coloured, while the bill is of course quite differently shaped.

The feathers begin to appear first on the wings, and nearly at the same time on the scapulars and tail, next on the upper part of back and on the flanks, and then on the uropygium. So far as can be seen, the new primaries are blackish, the secondaries and tail-feathers white, the tertiaries, wing-coverts, scapulars, and back-feathers brownish black with wide rusty-yellow ends, as are also upper tail-coverts. Flank-feathers and those of the uropygium white with rusty ends and blackish-grey subapical portions.

Young Rosy Gulls are very lively and clever little creatures. As soon as they see an intruder they try to creep through the grass to the water, and swim away to some distance, even if the waves are comparatively heavy. More readily still they swim to the places where tufts of *Carex* and other plants, old and dry, stand up here and there in the water, and then lie on the surface, quite still, close by one of these tufts, as if conscious that their greyish-marked dirty-yellow garb corresponds so closely with the spots and stripes of light and shadow playing on the dirty-yellow dead grass as to be practically invisible even at a distance of a few yards, especially if the wind, which is nearly always blowing here, is ruffling the surface. If you lie well hidden, after several minutes the little creature begins to swim about, returning to the ground or the wet grass whence you disturbed it, and uttering cries as it searches for its mother. When caught, it pecks your fingers, peeps and quacks, but is not much frightened.

The parents, especially the females, make a great noise around an intruder in the colony, varying their voices and notes even more than when there are eggs : " *kliáw, kliáw, kliáw ; kwiáoo, á-wa, á-wa, á-wa, trrrrr . . . ; pióo, kwée-kwoo, á-dak,* *á-dak, á-dak; kliáw, kliáw, éea, éea; kwa-kwa-kwa, pée-kwa, kakée-a,"* are heard all the time in various modulations. Near its eggs the Rosy Gull might appear somewhat foolish, but now all is changed. The female flies slowly just above the ground or wet grass, or partly swims, partly flutters, over the surface of the plant-covered water, settles down again, looking here and there, gently uttering her "*á-wa, á-wa,"* and makes you feel certain that she is trying her utmost to draw attention away from her young. But if you follow her, and then suddenly stop and look back, you will often see the little one hurrying from the place where you were just searching; while in any case you will find nothing at the place where the female appeared so busy. One female insisted upon fluttering about and sitting down so long at a certain place on an island where the colony of Rosy Gulls and Terns was situated that I carefully marked the spot and examined it, but only a Tern's nest was there. I thought at first that this was only an accidental occurrence, but immediately afterwards the same female Rosy Gull tried to attract my attention as persistently to another spot, lying still more out of my way, and another Tern's nest was there. The Terns understood these treacherous tactics quite well, and at the last nest the female with angry screams engaged in a short battle with the Gull.

In another case a colony of some ten or twelve pairs, where I took some five young, was deserted five or six hours later, while Rosy Gulls with young were to be found on the other side of the same lake, a kilometre distant.

I may add that Rosy Gulls killed on the 6th and 7th of July had their legs and feet less richly coloured than in spring, when they were coral- or blood-red; they were somewhat orange-red, and on the fore part of the tarsus of most specimens even horny-yellowish. The stomachs contained, as usual, only fragments of coleoptera, gnats, and other insects. All were moulting their primaries; the 9th and 10th pairs, and in some specimens the 8th also, were wanting.

Mr. Rojnowsky, a young man working with the expedition under my direction, has just informed me that on the 13th of June he found Rosy Gulls breeding abundantly near the station "Málaya" (st. Little).

This station lies some 150 kilometres to the west of Sredne-Kolymsk (on the direct way to Verkhoyansk), on the Alazéya River, near 153⅓° E.L. and 67⅞° N.L., in taiga or forest-clad ground, and forests extend at least some 150 kilometres further down the river, as I was informed by Lamuts. So we may now state that all the lowlands of the northern half of the Kolymá district (bordered by the rivers Chaun and Alazeya, the Arctic Ocean and the Stanowoi Mountains) are inhabited by *Rhodostethia rosea*, and this area covers at least 160,000 square kilometres. In the eastern parts of the Verkhoyansk district it probably breeds up to the Indigirka River.

1905, July 10,
v. Pokhodskoe.

XX.—*On some Palæarctic Birds' Eggs from Tibet*[*].

By H. E. Dresser, F.Z.S. &c.

Col. Waddell having kindly placed me in communication with Capt. R. Steen, the Medical Officer at Gyantse, Tibet, that gentleman sent to me some time ago a small collection of eggs which he had taken near the town, together with the parent birds, which he had procured in order that I might identify the eggs, particulars of which are given in the following paper. I include, in brackets, some very interesting field-notes which Capt. Steen has also forwarded. The bird-skins obtained along with the eggs are now in the Zoological Museum at Tring.

Ruticilla hodgsoni Moore. Hodgson's Redstart.
Dresser, Man. Palæarct. B. p. 51.

Two clutches were sent, each consisting of two eggs, which were taken on the 1st of June, 1905, with two of the parent birds. They are pale uniform blue, rather paler and clearer than those of *Ruticilla phœnicurus*, and measure 0·80 by 0·60 and 0·76 by 0·59 inch.

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[*] See 'The Ibis,' 1905, p. 525, for the last paper of this series.

(One nest was in a hole in an old wall, but others were found in holes in the sides of clay nullahs. The materials were grass and moss, thickly lined with feathers. The stomach contained grass and small insects, and the iris was light brown. The local name of this bird is *I-tak-tak*.)

LEPTOPŒCILE SOPHIÆ Severtz. Severtzoff's Warbler.

Dresser, Man. Palæarct. B. p. 90.

One clutch of four eggs, which were unfortunately incubated and therefore not blown, was sent, with one specimen of the parent bird. The eggs are very like those of *Phylloscopus* in general character, and are white, finely dotted with deep red, chiefly round the larger end; they measure from 0·60 by 0·44 to 0·62 by 0·46 inch.

(The nest, which was placed in a low bush in the jungle, was domed, with the opening on one side, rather below the middle. It was constructed of moss, wool, and hair, profusely lined with various sorts of feathers, and measured about 6 × 4 inches; it was taken near Gyantse on the 25th of May, 1905. The female sent had the iris red, and the stomach contained small insects and seeds. The call-note was a sort of thin *cheep, cheep*. The local name of the bird is *Chi-chung tebtok*, meaning the small bird the size of a thumb.)

Dr. Hartert, who has examined the bird, refers it to the subspecies *Leptopœcile sophiæ henrici* Oustalet.

PHYLLOSCOPUS AFFINIS (Tickell). Tickell's Willow-Warbler.

Dresser, Man. Palæarct. B. p. 99.

One clutch of three eggs was taken with the parent bird near Gyantse on the 16th of June, 1905; they are white, finely dotted with red round the larger end, and are exactly like those of *Lusciniola indica* figured in 'The Ibis' for 1903, pl. x. figs. 14 & 16; they measure 0·60 by 0·44, 0·61 by 0·44, and 0·62 by 0·47 inch respectively.

(The nest was placed in low scrub near the ground; it was dome-shaped with the opening near the top, and constructed of dry grass well lined with feathers. The usual number of eggs is four or five. The bird is plentiful in all the jungles. Iris black. Local name *Chi-chung tebtok.*)

The skin sent was in very poor condition, and, not having sufficient material for comparison, I sent it to Tring. Dr. Hartert has identified it as *Phylloscopus affinis*, but the eggs differ from others said to be those of *Phylloscopus affinis* taken near Sonamurg, Kashmir, by Major Buchanan, which are pure white, unspotted. I am informed by Indian oologists that the eggs of this species are usually white, unspotted; but I have received one clutch taken by Mr. Whymper in Kashmir in which one egg is spotted, like those from Tibet, though the others are pure white. It would therefore appear that the eggs of *Phylloscopus affinis* may not only be pure white, but also white finely spotted with red.

BABAX WADDELLI Dresser, P. Z. S. 1905, vol. i. p. 54, pl. iv.

Two clutches were sent, one of three and the other of two eggs, together with the parent birds, taken near Gyantse on the 27th of May, 1905. These eggs are all dark uniform blue, unspotted, a shade lighter in tint than those of *Hodgsonius phœnicuroides,* but much larger, measuring 1·26 by 0·9 inch.

(This bird nests in most of the jungles on the Gyantse plain. The nest was built of small twigs, grass, and wool, and lined with fine grass. It was placed near the top of a small sapling and contained three eggs, but sometimes four are laid. I have found nests in old willow trees and in low scrub-jungle. The bird is very secretive, runs swiftly or flies low from cover to cover, and is most difficult to shoot. The adult male was found sitting on the nest. Iris black. Food, seeds and small insects. Local name *Kyo-mo.*)

MOTACILLA HODGSONI Gray. Hodgson's Wagtail.
Dresser, Man. Palæarct. B. p. 199.

One clutch of four eggs, with the parent bird, was taken near Gyantse on the 1st of June, 1905. They are greyish white, finely speckled all over the surface with wood-brown, and in three the spots are more numerous at the larger end. In size they vary from 0·82 by 0·58 to 0·85 by 0·63 inch.

(The nest was in a heap of stones at the side of a stream, and was composed chiefly of hair of all sorts and a little grass, and lined with hair. Local name *Ting-ting-ma.*)

MOTACILLA CITREOLOIDES (Hodgs.). Hodgson's Yellow-headed Wagtail.

Dresser, Man. Palæarct. B. p. 204.

One clutch of three eggs, with both parent birds, was taken near Gyantse on the 17th of June, 1905. They resemble greenish-grey varieties of those of *Motacilla flava,* but are larger, measuring from 0·81 by 0·60 to 0·84 by 0·60 inch.

(The nest was well hidden in a hollow in a meadow near the river-bank, and was constructed of grass and wool, and lined with hair. The bird's stomach contained insects. The bird is not very common. The iris is grey. Local name *Ani Kegah* or *Ani-chepta,* at Lhasa *Si-chi-pi-chi.*)

LANIUS TEPHRONOTUS (Vigors). Grey-backed Shrike.

Dresser, Man. Palæarct. B. p. 245.

Two clutches were sent of two and three eggs respectively, with the parent birds, taken near Gyantse on the 4th of June, 1905. They are pale buffy white with pale brown markings chiefly massed round the larger end, and measure from 0·95 by 0·72 to 0·96 by 0·73 inch. In general appearance they closely resemble those of *Lanius raddii* (figured 'Ibis,' 1905, pl. xi. figs. 1 & 2), but are larger.

(The nest was constructed of sticks, roots, and wool, and lined with fine grass-roots; it was placed in the top of a young sapling, but this Shrike also builds in low bushes five or six feet from the ground. It was often seen on the topmost twig of a small tree uttering its hoarse call of *dre, dre, dre, dre*; whence it is locally named *Dre-Dre.*)

MONTIFRINGILLA ADAMSI Moore. Adams's Snow-Finch.

Dresser, Man. Palæarct. B. p. 299.

One clutch of three and another of two eggs (one of the latter broken), with the parent bird, were taken near Gyantse on the 31st of May, 1905. The eggs are pure white, very smooth, but not glossy, and measure 0·85 by 0·66 inch.

(This Finch is always seen about stony places, chiefly on the lower slopes of the hill-sides. The nest was under a large rock, about a foot from the opening. Earth had been scooped out to make room for the nest, which consisted of a foundation of grass, the rest being an interesting mixture of hair and feathers of all the different mammals and birds in the locality. The male bird had the iris brown, and the stomach contained insects and seeds. Local name *Richi-kya-shok.*)

MONTIFRINGILLA MANDELLII. Mandelli's Snow-Finch.
Dresser, Man. Palæarct. B. p. 299.

One clutch of two eggs was sent, with the parent bird, obtained near Gyantse on the 14th of July, 1905. They are pure white and slightly glossy, and measure 0·83 by 0·59 inch.

(This bird has the same habits and flight as *Podoces humilis,* but it places its nest in the abandoned holes of mouse-hares, which are not straight but tortuous, and does not excavate a hole for itself. It makes, however, a somewhat large nest-chamber from three to five paces from the entrance. The nest is not so big as that of *Podoces humilis* and consists of a mass of grass, roots, and hair of the mouse-hare. This bird is said never to dig its own nest-hole; we found it frequenting the slope of a hill near Gyantse and associating with the mouse-hare and *Podoces humilis*; its food consisted of insects and seeds. Local name *Abjé.*)

LINOTA RUFO-STRIGATA Walton, Bull. B. O. C. xv. p. 93.

Five clutches of three and two eggs respectively, with the parent birds, all obtained near Gyantse on the 14th and 17th of July, 1905. These eggs resemble those of *Linota flavirostris,* but are paler, being bluish white marked, chiefly at the larger end, with dull red and blackish-red spots; they measure from 0·69 by 0·50 to 0·70 by 0·52 inch.

(The nests of these birds were built on the top of low thorny bushes about two feet from the ground, on the lower slopes of the hills, and were constructed of grass and moss, lined with wool and hair, chiefly the latter. The number of eggs varied from two to three or four, and we never found five. Iris greyish brown. Food, seeds. Local name *Pegam-bejée.*)

CARPODACUS SEVERTZOVI Sharpe. Severtzoff's Rose-Finch.

Dresser, Man. Palæarct. B. p. 319.

One clutch of three eggs, taken on the 1st of August, 1905, with one of the parent birds, a female. They are exactly similar to those figured by me in 'The Ibis' for 1904, pl. iii. figs. 1 & 3.

(This nest was taken near Kangma, thirty miles from Gyantse; it consisted of dry grass and roots with a thick lining of hair; it was placed on a low bush about a foot from the ground, and contained four almost fresh eggs. These low bushes grow about the edges of the small fields at the foot of the nullahs. Local name of bird *Awăl-look-si.*)

CARPODACUS PULCHERRIMUS (Hodgson). Hodgson's Rose-Finch.

Dresser, Man. Palæarct. B. p. 325.

Two clutches of eggs and several birds were sent, all obtained near Gyantse in the latter half of July. The eggs are deep turquoise-blue, slightly dotted at the larger end with black, and measure from 0·75 by 0·54 to 0·76 by 0·55 inch.

(This Rose-Finch nests in bushes in the thorn-jungles, some three or four feet from the ground, and never in the higher branches. The nest is constructed of dry grass with a very thick lining of hair, and the number of eggs in a clutch varies from three to four. Local name *Pegam-bejée.*)

OTOCORYS ELWESI Blanf. Elwes's Shore-Lark.

Dresser Man. Palæarct. B. p. 379.

One clutch of two eggs, with the parent bird, obtained near Gyantse on the 6th of June, 1905. They are pale yellowish grey, marked all over with pale wood-brown, and resemble pale eggs of *Otocorys alpestris*, though they are rather larger, measuring 0·94 by 0·64 inch.

(This Lark is fairly common on the hill-sides and in lonely places high up in the hills; it rarely occurs in the valleys and never in flocks. The nest is placed on the ground, on a billock, and is composed of grass, lined with plant-cotton; from three to four eggs are said to be laid usually. Food, chiefly insects. Local name *Koogo-tingma* and *Boogo-tunga*.)

Alauda inopinata Bianchi. Tibetan Skylark.

Bianchi, Annuaire Mus. St. Pétersb. ix. pp. xxiv, xxx, & xxxi.

Three clutches of three, three, and two eggs respectively, with the parent birds, were taken on the 28th, 30th, and 31st of May, 1905. These eggs are somewhat variable in general appearance, two clutches being dull warm whitish, very closely and finely dotted with warm brown, whereas the third clutch is much paler, the ground-colour being white and the brown markings lighter. In general appearance they closely resemble eggs of *Alauda gulgula*, but are larger, measuring from 0·89 by 0·67 to 0·92 by 0·69 inch.

(The nest was usually a mere cup or hollow on a grassy bank, neatly lined with fine dry grass, but in one case there was a slight lining of a sort of plant-cotton. The bird is very plentiful around Gyantse. Iris blackish brown. Food, seeds and insects. Local name *Cho-mo*.)

Calandrella tibetana Brooks. Tibetan Short-toed Lark.

One clutch of four eggs with the parent birds, which were obtained near Gyantse on the 1st of June, 1905. These eggs are finely dotted with warm light brown on a white ground, the spots being more numerous round the larger end; they are indistinguishable from eggs of *Calandrella brachydactyla* obtained by Dr. Krüper near Smyrna.

(This bird is very common on the hill-sides near Gyantse. The nest was constructed of dried grass, sparingly lined with plant-cotton, and was placed on the ground on a hill-side under shelter of a little tuft of grass. Iris brown. Food, seeds and insects. Local name *Ise-cho*.)

Podoces humilis Hume. Brown Ground-Chough.

Dresser, Man. Palæarct. B. p. 409.

Two clutches with the parent birds, obtained on the 14th and 17th of July. The eggs are pure white and slightly glossy, and measure from 0·88 by 0·62 to 0·96 by 0·64 inch.

(These birds breed in June and July; a nest found on the 1st of July contained three young birds and one egg, while others found in July contained young birds. They are sometimes seen away from the localities inhabited by the little mouse-hares, but are generally associated with them. They dig holes for themselves in which they place their nests, and do not make use of the holes of the mouse-hare as does *Montifringilla mandellii.* Their flight is very low, quite close to the ground, and never protracted, and they are great runners. I have never seen one perched on a tree or bush, as indeed they frequent bare localities. The nest-hole, excavated in the side of a nullah about 18 inches below the top, is straight and narrow till the nesting-chamber is reached, too narrow for the hand to enter. At the end a considerable cavity is excavated, in which the abnormally large nest is placed, and this chamber varies in distance from the entrance from three to twelve feet. The nest is large, as much as fifteen inches in diameter, and consists of a loosely woven mass of dry grass, roots, moss, hair, and wool, with no particular lining; the number of eggs laid varies from three to five. This bird feeds chiefly on insects. Iris brown. Local name *Day-day.*)

Pica bottanensis Deless. Tibetan Magpie.

One clutch of five eggs taken at Gyantse in May 1905; they do not differ from those of *Pica rustica* taken in Europe.

(The Magpie nests in high trees throughout the month of May.)

Archibuteo hemiptilopus Blyth. Himalayan Rough-legged Buzzard.

Dresser, Man. Palæarct. B. p. 515.

One clutch of three eggs with the parent bird, which were taken near Gyantse on the 10th of May, 1905. These eggs closely resemble those of *Archibuteo lagopus*, and when placed in a series of the latter cannot be separated. The measurements are 2·38 by 1·82, 2·34 by 1·86, and 2·40 by 1·88 in. respectively, and they vary considerably in markings.

(This bird breeds amongst the hills around Gyantse, and the nest was placed on a ledge on the steep side of a deep nullah about thirty feet from the ground and fifteen feet from the top. It was constructed of large sticks and twigs, with a scanty lining of grass. The eggs weighed 2 oz. 110 grains, and the bird is said to occasionally lay four. I shot the adult female, which had the iris greyish brown and the bill and feet brown; in the gizzard was a mouse-hare, of which there were many all round the nest. This species is said to feed also on fish and lizards, but never on carrion or small birds. The male was flying round and seemed to be darker in colour, but I could not get it. Local name *Nya-sen*, at Lhasa *Isib-lak.*)

Milvus melanotis Temm. & Schlegel. Black-eared Kite.
Dresser, Man. Palæarct. B. p. 536.

Three eggs, one of which arrived in small pieces, with one of the parent birds, an adult female. They vary considerably in markings, and closely resemble eggs of *Milvus ægyptius*, but are larger, the two which arrived safely measuring 2·20 by 1·75 and 2·27 by 1·76 inch respectively.

(This Kite breeds near Gyantse all through the month of May. I examined several nests, and never found more than a single egg. The bird sent had the iris grey. The food is principally carrion. Local name *Dé-lé*, at Lhasa *Ping-gyn-ma.*)

Falco tinnunculus Linn. Kestrel.
Dresser, Man. Palæarct. B. p. 552.

One clutch of three eggs, taken at Gyantse Jong on the 22nd of May, 1905, which are blotched and marked with dull red on a yellowish-white ground.

(The eggs were laid in a hole in a wall, in a little hollow with a rim of clay. I also found young birds on the 2nd of June in a hole in a high clay-bank. The local name is *Irá.*)

ANSER INDICUS (Lath.). Bar-headed Goose.

Dresser, Man. Palæarct. B. p. 593.

Two eggs taken at Bham-tso on the 9th of June, 1905. They resemble those of the European Grey Goose in shape and coloration, and measure 3·26 by 2·16 inches. Unfortunately no down was sent.

PERDIX HODGSONIÆ Hodgson. Tibetan Partridge.

Dresser, Man. Palæarct. B. p. 684.

One clutch of five eggs with the parent bird, obtained near Gyantse on the 17th of June, 1905. These eggs resemble some of those of *Perdix cinerea* in my collection in being brownish cream-coloured, and measure from 1·40 by 1·05 to 1·45 by 1·07 inch.

(This Partridge breeds in the grass between the fields. I found one nest containing five, and another containing four eggs.)

TETRAOGALLUS TIBETANUS Gould. Tibetan Snow-Partridge.

Dresser, Man. Palæarct. B. p. 690.

One clutch of six eggs with the hen bird, obtained near Gyantse on the 2nd of June, 1905. In general appearance these eggs resemble those of *Tetraogallus caucasicus*, being clay-buff tinged with oil-green, and well spotted with dull dark rufous, but some of them are rather paler with little tinge of oil-green. They are smaller than those of any other species of *Tetraogallus*, measuring from 2·29 by 1·58 to 2·31 by 1·63 inches.

(The nest was composed of grass and feathers, and was placed under the shelter of a rock at the top of a high rocky mountain at an altitude of 15,000 feet. The call of this bird is Partridge-like, and it is a great runner, appearing only to fly when suddenly frightened. In the winter it unites in coveys of from twelve to fifteen individuals.)

The egg of this bird was well figured in the Cat. of Birds' Eggs in Brit. Mus. vol. i. pl. ii. fig. 7, but the specimen there figured is much paler than those above described and has none of the oil-green tinge.

GRUS NIGRICOLLIS Prjev. Black-necked Crane.

Dresser, Man. Palæarct. B. p. 718.

Two eggs, which were taken on the 12th of June, 1905. The bird was not sent, but it was identified by Capt. Steen. These eggs are olive-grey, with pale reddish-brown shell-blotches and darker surface-markings, one being more boldly blotched than the other; they measure 3·80 by 2·40 and 4·01 by 2·38 inches respectively. They resemble some varieties of eggs of *Grus communis*.

(They were found in a hollow on an island near the edge of Bhan-tso, and there was practically no nest. Tibetan name *Tung-dū*.)

XXI.—*Bird-Notes from South Africa.*

By A. H. EVANS.

THE activity of South-African ornithologists, as witnessed by recent papers in various journals, and especially by the "Birds" of 'The Fauna of South Africa' by Messrs. Stark and Sclater, is so pronounced at the present time that mere lists of species from particular localities will soon become superfluous, and, moreover, are chiefly the province of resident observers; but it may interest the readers of 'The Ibis' to hear of the birds noticed during the visit of the British Association to South Africa in August and September 1905, as the narrative will shew what forms are likely to be met with during a winter-journey through the vast area extending from Cape Town to the Zambesi and also the varied character of the districts which they are there found to inhabit. Rare or local species always require special search, and this was seldom possible in the restricted time at my disposal, but advantage was taken of every opportunity that presented itself of examining the country in the neighbourhood of the towns visited.

During the outward voyage of the 'Saxon' comparatively few birds were noticed, as we only touched at Madeira, and the weather was too fine for wanderers to seek refuge on ship-board, but near the Desertas *Oceanodroma castro*, *Procellaria pelagica*, and *Puffinus kuhli* were identified, while in more southern latitudes *Daption capensis* and *Majaqueus æquinoctialis* came under observation, and the Albatroses *Diomedea melanophrys* and *Thalassogeron chlororhynchus* were our constant companions. As the two latter followed in the wake of the ship a considerable amount of wing-action was apparent, and they did not exhibit to the same extent the long-sustained sailing-motion so characteristic of *D. exulans*. The two forms occurred together, and their habits and appearance certainly did not suggest their assignment to separate genera. *Larus dominicanus* and *Spheniscus demersus* made their appearance in Table Bay; *Sula capensis*, *Phalacrocorax capensis*, and *P. africanus*, if not other members of the latter genus, were frequently seen off the coast, while a species of *Prion* was observed in small parties, though not identified, during the latter part of the voyage. This was probably *P. desolatus*.

The visitor to South Africa during the southern winter is at once struck by the fact that, though birds are plentiful enough and even abundant in many places, the number of species seen is small compared with what might be expected from books on the Avifauna; this is, of course, partly due to the season of the year, but even more to the vast stretches of waterless land with their limited capabilities. No fault, however, can be found with the Cape Peninsula, where the surroundings are admirably adapted to bird-life; Table Mountain with its heathery slopes and gorges full of hardwood trees and evergreens, the suburbs at its back with their splendid avenues of oaks, pines, gums, Casuarinas, and undergrowth of wattle-trees, the sandy shores backed by broken and rocky ground, and the wide stretch of barren scrub known as the Cape Flats situated behind the residential quarters between Cape Town and Simonstown, all affording food and shelter to species of the most different requirements.

At the time of our arrival the general breeding-season could hardly be said to have begun, though a Weaver-bird (*Sitagra capensis*) was busily lining its pendent nests, which hung in numbers from a tree in the Public Garden at Cape Town, and at Wynberg the Cape Robin (*Cossypha caffra*) and the Wagtail (*Motacilla capensis*) may possibly have laid their eggs, while the same may perhaps be said of the Backbakiri* (*Laniarius gutturalis*), the Fiscal Shrike (*Lanius collaris*), and the Secretary-bird (*Serpentarius secretarius*). It must be remembered, however, that the breeding-season in South Africa is by no means so regular as in Europe, a notable instance of which fact is afforded by *Promerops cafer* (the Cape Sugar-bird), which had already finished breeding in August. Saldanha Bay is evidently an early station, and eggs of the Penguin (*Spheniscus demersus*) from Dassen Island and elsewhere had arrived at the market in some quantities.

I take this opportunity of acknowledging my indebtedness to the friends who guided or accompanied me, for without such help the newcomer in search of birds would be at a great disadvantage, and would have the utmost difficulty in determining his species without the aid of a gun.

An expedition to the slopes of Table Mountain at Hoet's Nek on August 16th with my friend Judge Graham proved of the greatest interest, for there, among the Protea-bushes which studded the heathy ground, *Promerops* was to be seen in considerable numbers. The Proteas—as well as the pink, coral, and white heaths—were in full bloom, and varied from reds and yellows to white and a curious purplish-black colour. In these bushes *Promerops* often builds its nest, and on their flowers we saw it perched while sucking the nectar with its long curved beak inserted among the petals. The bird flitted along with a low jerky flight from shrub to shrub and uttered shrill chirping notes. Three nests were found, composed of plant-stems, roots, and grass, and lined with leaves: from these the young had already flown, but possibly other nests still contained eggs. In the heathery ground a small brown bird, which I could not satisfactorily identify, kept flitting from boulder to boulder after the manner of a Wren,

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* The local pronunciation of this bird's name seems to be rather Bachmakiri than Backbakiri.

Rooibeckies (*Estrilda astrilda*) continually passed us in small flocks, the Backbakiri (*Laniarius gutturalis*) and the Bulbul (*Pycnonotus capensis*) crossed our path at intervals, and a single individual of *Tinnunculus rupicola* was observed in a low tree.

The beautiful groups of Silver-trees (*Leucodendron argenteum*) did not appear to attract many birds, but in the avenues and gardens of Wynberg and Kenilworth many additional species were in evidence, such as *Cossypha caffra*, *Turdus olivaceus*, *Motacilla capensis*, *Zosterops capensis*, *Serinus canicollis*, *Corvus scapulatus*, *Passer arcuatus*, *Turtur capicola*, and *T. senegalensis*, with numbers of *Sturnus vulgaris*, which is said to have been originally introduced by Mr. Cecil Rhodes. The "Robin" and the native Thrush were the chief songsters; while the groves resounded with the notes of the two Doves, of which one was as harsh as the other was soft and pleasing.

I spent most of August 17th on the Cape Flats in the company of Mr. W. G. Fairbridge, whose intimate acquaintance with the district and its avifauna was of the greatest value. These immense stretches of scrub-covered ground, bushy marshes, and rolling sand-hills, intersected by cross-roads margined here and there with wattle-bushes, and interrupted by larger or smaller vleys, furnished abundance of bird-life. The Backbakiris and Bulbuls looked very handsome as they perched on the topmost sprays of the bushes, active little Warblers (*Prinia maculosa* and *Cisticola tinniens*) darted in and out of the low-growing shrubs uttering their sharp cries of alarm, small parties of *Colius capensis* chased each other from tree to tree giving vent to softer notes, and *Fringillaria capensis* sat on the tops of the bushes, as our Yellow-hammer does. The Yellow-bellied Canary (*Serinus flaviventris*) flitted past in small flocks, noisy bands of Red-winged Starlings (*Amydrus morio*) crossed our path at intervals to settle at a distance, while overhead an occasional Heron or Crow (*Corvus scapulatus*) and one Tern (*Sterna balænarum*) winged their way towards the neighbouring shores. On one of the larger sheets of water were a few individuals of *Podicipes cristatus*, while on a smaller vley near "The Retreat" we found the lovely little Kingfisher *Corythornis cyanostigma*, *Gallinula chloropus*, and a pair of the rare Duck *Thalassornis leuconota*. Near the same spot I saw my first Sun-bird (*Nectarinia famosa*), which shewed its brilliant metallic-green plumage to perfection as it flew from one gum-tree to another in the sun. *Promerops* was rare in this locality, but we met with all the common birds seen near Wynberg and also with *Lanius collaris*, *Sphenœacus africanus*, and *Larus dominicanus*.

The fine Museum at Cape Town, of which Mr. W. L. Sclater is Director, furnished admirable opportunities for identifying our birds.

A trip by rail to Simonstown took us past many vleys and smaller marshes, where Herons and Little Egrets were constantly to be seen standing in the water, and on arrival at the station Judge Graham's sons drove us out to the hill-sides sloping towards the sea. Birds, however, were there decidedly scarce, though I added to my list the Caspian Tern and the Ground-Woodpecker (*Geocolaptes olivaceus*), of which three rose at my feet from a bushy ravine. A black-and-white Chat was observed, but not identified.

We left Cape Town on the evening of August 19th for Durban, and touched at Port Elizabeth and East London. At the former town, where we were treated with the greatest kindness, we were shown a good collection of local birds in the Museum, and were conducted over one of the Parks, in which we had an excellent opportunity of observing Weaver-birds * building round a small pond. Males and females were busily engaged, the former constantly bringing the materials to the latter at the nests, while their quick movements in and out of the half-built structures were very striking. None of the birds appeared to be sitting. We had only time at East London to drive to the "Horse-shoe" near Cambridge, a finely wooded curve on the Buffalo

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* In my notes these appear as *Hyphantornis velatus*, but in 'The Fauna of South Africa' this species is not recorded from Port Elizabeth, and very possibly I was mistaken.

River, where the banks were dotted with a splendid pink *Hæmanthus* (?) above and clothed with a dense thicket of palms and other trees below. Birds were constantly heard, but we could never get a satisfactory sight of them, though we put one (evidently off a nest) out of the crowded leaves of a palm which defied all our attempts at investigation. Our first Glossy Starlings (*Lamprocolius melanogaster*) were seen near Cambridge. Our stay in Durban (August 22nd, 23rd), though short, was utilized by a visit to Lower Umkomaas. Proceeding by train southwards down the coast, we passed through the best-wooded country that we had yet seen, where the sides of the railway were bright with the glorious scarlet *Hæmanthus* and the equally fine Kaffirbaum or Coral Tree (*Erythrina caffra*), while the fields of sugar-cane were a striking feature of the district. The coast, however, produced nothing better in the way of birds than a few Larks, and here, as in many other places, the size of our party kept every feathered creature at a distance. I sat for an hour or two under trees in different places, but saw little except one example of *Nectarinia famosa* and many brilliant Swallow-tail and other butterflies. Mr. A. D. Millar's collections were on view at Durban, but a heavy thunderstorm prevented our taking full advantage of the opportunity of examining them. At Maritzburg there was no chance of exploring, though while at a great native dance that took place at Henley I observed a few Pipits and Larks on the grassy uplands.

At Colenso matters were very different, for we slept in our four trains at the station, and had plenty of time to explore the immediate neighbourhood. Even while walking over the battlefield in the afternoon (August 26th) we put up a good many Larks and Pipits, and spent some time in unsuccessful search for the nest of a pair of Crowned Lapwings (*Stephanibyx coronatus*), which were in a state of great agitation. Thence I crossed the railway-line to the broad belt of scrub which fringes the Tugela River, and was delighted to find it full of birds, though it was too late to make a detailed examination that evening. I had time, however, to wade the river below the ruined bridge and to examine the thorny bushes and withies on the farther bank. Here and there stood a Mimosa with its branches crowded with nests of two kinds of Weaver-birds and a Sparrow (*Passer arcuatus*); those of the former belonged to the previous season and the parent-birds were absent, but the Sparrows had just finished lining their nests, chiefly with Guinea-fowls' feathers, and probably it was only bad luck that prevented my finding eggs. A solitary black Crow came flying over the river, and Sand-Grouse (? *Pterocturus namaqua*) were crossing the stream at dusk uttering their shrill cries.

Next morning at 6 A.M. I proceeded to work the scrub on the Colenso side of the river. The trees and thorn-bushes were full of nests, which belonged to two kinds of Weaver-birds, Fiscal Shrikes, Sparrows, and Doves (*Turtur capicola* or *T. senegalensis*). Other nests there may have been, but in the absence of their owners it was impossible to identify them. Breeding had just begun, for Mr. A. D. Hall found a clutch of Shrike's eggs. My attention was before long attracted to a sweet flute-like note with which I was unacquainted, and after considerable trouble I ascertained that it was uttered by a black-and-white Puff-backed Shrike (*Dryoscopus cubla*). A particularly common kind of nest was composed of very fine grasses, and close to it was invariably a wasps' comb fashioned around the branches. The fact seems familiar to me, but I can find no reference to it. One Dove built a very frail little platform of sticks, and must, I think, have been *Œna capensis.*

Every here and there small parties of Hoopoes (*Upupa africana*) kept rising in front of me, only to drop to the ground again a short way ahead. The white in the plumage was hardly noticeable, and the crest was so much depressed in flight as to be practically invisible—in fact, it was some time before I felt sure of the bird's identity. One fine flock of Guinea-fowl (*Guttera edouardi*) rose from almost under my feet among the bushes, and flew away low and heavily to a distance of some hundred yards. I expected to come across one or more species of Francolin, but I did not see a single individual until the bare country north of the Tugela was reached, when a few were seen from the train, and exactly the same happened with regard to the Blue Crane (*Tetrapteryx paradisea*) and the Bustards. The last-named it was impossible to identify.

We spent Sunday, August 27th, at Ladysmith, and devoted our chief attention to a kopje near the town and the river, which was covered in its upper parts by flowering aloes. Here birds were fairly plentiful, and we again had a good view of *Nectarinia famosa*. Canaries and small Finch-like birds were not uncommon, *Laniarius starki* was seen for the first time, and Bulbuls (*Pycnonotus layardi*) were breeding, though a nest of the latter that we found was barely ready for eggs. Two species of Sand-Martin (*Cotile paludicola* and *C. cincta*) were hawking in the sun over the river near the shelters dug in the banks during the siege, and butterflies were exceptionally abundant. It was dark when the train left the town, and by the morning we had passed through the tunnel at Laing's Nek and were close to Johannesburg, where the mines were the chief attraction, and the country, so far as we saw it, was nearly destitute of birds.

On Thursday, August 31st, we made an excursion to Pretoria, a delightful, though hot, town, with its well-known Zoological Gardens, in which I spent most of the day. All kinds of birds from Ostriches down to the smallest Passerine forms were there to be seen in the enclosures; but to me the chief attraction was the large double aviary full of many species, and Weaver-birds in particular, the nesting-habits of which it was most interesting to watch. The way in which the larger kinds wrangled with the grass-blade, bit it, bent it, and pushed it through the half-completed structure was most amusing, while their habit of hurrying to the other side of the nest-wall to weave in the end that had been just pushed through or to see if it had penetrated properly was almost human in its intelligence. The other species were not breeding, but at a pond in the Gardens a pair of birds resembling Reed-Warblers were particularly busy among the tall grasses.

On Friday, September 1st, a party of botanists and zoologists trekked in mule-waggons to the Wonderboom Tree (a magnificent specimen of *Ficus cordata*) on the Magaliesberg Range, under the leadership of Mr. J. Burtt-Davy, Government Botanist, whose kindness we much appreciated thoughout our stay, as we did that of many other good friends. The plants were extremely interesting and birds were plentiful. I had the great advantage of the company of Mr. Lionel Taylor, of Irene, whose collection of birds was on view at Johannesburg, with that of Mr. Alwyn Haagner; consequently I was able to identify nearly all the species met with, while Mr. Pole Evans was equally helpful in the botany when we separated from the main party. Two spots had been pointed out as haunts of *Gyps kolbii*, and to these we first climbed. They were on the cliffs at the top of the high kopjes which composed this part of the range and were fairly easy of access. The Vultures were said to breed in the locality, but we could find no nests, though a dozen individuals or more were seen winging their way to their roosts as the evening came on. We had admirable opportunities of studying the habits and listening to the notes of the species observed, and only regretted that our time was so limited. On or near the kopjes we found *Tinnunculus rupicoloides*, *Cossypha caffra*, *Pycnonotus layardi*, *Fringillaria tahapisi*, *Dicrurus afer*, *Nectarinia famosa*, *Laniarius subrufipectus*, *L. gutturalis*, *Saxicola familiaris*, *Spizocorys conirostris*, *Tarsiger silens*, *Ortygospiza polyzona*, and a species of *Apalis* (?); on the river we observed *Pyromelana oryx* in its brown winter plumage, *Hyphantornis velatus*, *Motacilla capensis*, *Hirundo albigularis*, *Cotile paludicola*, and *Ptyonoprogne fuligula* (?); near the Wonderboom we met with *Coliopasser ardens*, *Lybius torquatus*, *Tricholæma leucomelas*, *Melittophagus meridionalis*, *Zosterops virens*, *Dilophus carunculatus*, *Lamprocolius* (? *sycobius*), *Sphenœacus natalensis*, two species of *Cisticola*, *Turtur senegalensis*, *T. semitorquatus*, *Œna capensis*, *Serinus angolensis*, *Colius erythromelon*, *Prinia mystacea*, and *Poliospiza gularis*; on the sandy flats *Mirafra* (? *africana*) was not uncommon, while not far off a species of *Campothera* and a Buzzard, which we were unable to determine, were observed. In the scrub on one of the hill-slopes were many old nests of Weaver-birds and Shrikes, but no eggs were found. The loud ringing notes of the Barbets were especially noticeable, and the birds themselves, though shy, were very conspicuous when perched upon the tree-tops.

Returning in the evening to Johannesburg—where we had previously had the pleasure of being present at a meeting of the South African Ornithologists' Union—we were just in time to catch our train to Bloemfontein. Round that town the country was still bare and parched, but in the small oasis surrounding a farm a few miles distant I was able to make some observations, while the dry veldt afforded us a sight of several pairs of a little Courser, probably *Rhinoptilus africanus*, and of a good many Larks. Among several unidentified black birds, I must doubtless have seen there or in Natal *Coliopasser progne*, the Sakabula or Isa-kabuli bird of the natives, from the plumage of which they make their decorative feather-balls.

From this time onwards we had constant opportunities of noticing birds at the different stations on the line at which we made short stoppages, but except that the Sparrows had fully fledged young at Norval's Pont on September 4th—where no other birds seemed to have eggs—nothing came under observation that we did not see to better advantage elsewhere. A nest, which was probably that of the Hammerkop (*Scopus umbretta*), was visible from the train at one point.

Kimberley and its diamond-mines was our next halting-place, and there I had two good opportunities of searching for nests, though I was again struck by the small number of species of birds compared with the large number of individuals. In the avenues laid out during the siege Sparrows were plentiful and had fresh eggs, Doves (no doubt *Œna capensis*) were beginning to nest in the orange-trees and in some cases had laid their eggs, while other species were evidently preparing to breed. To my great regret, I was obliged to refuse the kind invitation of Mr. Lynch, the Manager of the Waterworks, to visit the Vaal River in his company, but I spent several pleasant hours at his beautiful home at the Intermediate Pumping Station, some six miles from the town, where I found eggs of *Cossypha caffra* and *Serinus flaviventris*. The "Robin" had its nest in an outhouse, the Canary in a low evergreen hedge, while Swallows (*Hirundo cucullata*) had just returned from their northern winter-quarters, and were flocking in immense numbers round the eaves of an outbuilding, on which were already to be seen the foundations of dozens of nests made of red clay. Here we felt once more the disadvantage of a hurried journey, for no situation could have been more suitable for observing the bird-life of the district, and it was evident from a small collection of skins which had been made on the spot that, besides the breeding species, many others visit this oasis during their migration.

The journey through Bechuanaland and the Kalahari Desert to the Victoria Falls introduced us to a complete change of scenery and avifauna. The soil was dry and sandy as elsewhere, but its whole surface was usually covered with mimosa-scrub, in which small trees stood up at intervals. The rivers were few and far between. *Œna capensis* was still seen flying low in the air along the railway, and Weaver-birds' nests were scattered, as usual, over many a thorn-bush, but the latter in many cases belonged to forms which we had not hitherto met with, and in that of *Textor niger* were combined into one massive structure. The fine black-and-white Shrike (*Urolestes melanoleucus*) continually flitted from tree to tree or bush to bush looking exactly like a small Magpie, the European Bee-eater (*Merops apiaster*) with its varied colouring and the still brighter *M. nubicoides* with its carmine throat not only frequented the scrub of the sandy desert, but perched fearlessly on the telegraph-wires while the trains were passing; two species of Roller (*Coracias caudatus* and *C. mosambicus*) were still more accommodating and seldom moved from their posts on the same wires, and along with them were two kinds of Hornbill (*Lophoceros leucomelas* and *L. erythrorhynchus*), which often seemed too lazy to do more than turn their heads over their backs to examine the line of carriages. Vultures and Eagles—*Gypaëtus ossifragus* among them, according to a resident in the district—were occasionally seen soaring high in the air, a single Crested Hawk (? *Baza verreauxi*) was observed on the top of a low tree: a few large Bustards which it was impossible to identify, and a much greater number of the smaller species, sped over the flats as we disturbed them at their repasts. Occasionally the fine purple Plantain-eater (*Gallirex porphyreolophus*) was seen among the scrub, and much more frequently the grey *Schizorhis concolor*. Drongos (*Dicrurus afer* and *D. ludwigi*) and Glossy Starlings with their green or blue coloration were a striking feature in the scene, while at a small vley two examples of *Ephippiorhynchus senegalensis* and a Hammerkop were reported by the passengers in the first train.

Often during the daily stoppages I followed up the Bee-eaters and Rollers, but could find no evidence of their breeding, while the Hornbills flew heavily ahead of me from tree to tree with their broad black-and-white wings outspread, only to settle to rest again as soon as I turned away. The whole of this desert must be a paradise for the ornithologist a little later in the season, but we were evidently too early to see it at its best. The characteristic *Dombea* trees were covered with their white flowers, but otherwise the vegetation was not in an advanced state, except as regarded some of the low-growing herbaceous plants.

At Bulawayo, where we broke the journey, I was able to arrange for several hours in the "bush" round the town, but, whether on account of the excessive drought or the season of the year, the avifauna was most disappointing. Evergreens and creepers occurred here and there among the mimosa-scrub and a long avenue had recently been planted leading from the town to the Governor's residence, so that the surroundings were not unsuited to birds; nevertheless, except for *Corvultur albicollis* and a few Doves and Sparrows, all the result of a long and silent watch was to obtain a sight of a few flocks of a lovely little purple-cheeked Weaver-bird (*Estrilda granatina*) at very close quarters and to hear the harsh reiterated note of a mysterious species which skulked ahead among the tangled portions of the vegetation and utterly refused to shew itself. I may, however, have been unlucky in my choice of a direction, and of course I was never more than a mile or two from the centre of the town. We visited the Matopo hills in a large party by train and coach, but had little chance of exploring in our limited time. Giraffes and other animals were seen in the Park.

Near the Victoria Falls the country becomes somewhat more thickly wooded, though even in the so-called desert small trees were almost everywhere studded about among the thorny scrub. None of the trees, however, gave any impression of great size or height until the Falls were reached, while there was no attempt at tropical jungle even on the banks or islands of the Zambesi. Palms, however, flourished in the "kloofs" or ravines, and baobabs with their curious enlarged trunks were scattered over the district, but the "rain-forest" was almost dry, as comparatively little water was coming over the falls. Birds were fairly plentiful, but our party had now become too large and active to admit of many observations being made. Nevertheless, in the direction of Livingstone Island I observed two Ospreys (*Pandion haliaëtus*) fishing in the river, fair numbers of small Cormorants (*Phalacrocorax africanus*) perched on the rocky islets—and with them undoubtedly a few Snake-birds (*Plotus rufus*); a Crow (*Corvus capensis*) and a Bulbul (? sp.) were also seen, a Warbler was climbing about the reed-grasses on one of the islands, the Black Tit (*Parus niger*) clung to the branches, and finally *Ceryle rudis*, *Motacilla vidua*, and *Lophoceros epirhinus* were noticed not far from the Hotel. Without a gun it was almost impossible to determine the smaller birds, which occurred in flocks, but the commonest kind looked like a small rufous Weaver-bird. I spent a whole morning sitting in concealment upon a lonely island, but saw only one bird there and heard few. Mr. W. L. Sclater, however ('Ibis,' 1905, pp. 106–114), has given so full a list of the species met with during his earlier visit that my ill-fortune is of little importance, and to that list our readers may be referred for an account of the avifauna of the Falls generally.

On the return journey to Kimberley we again halted at

Bulawayo, where we parted from our East Coast contingent, and throughout the whole distance had once more the pleasure of being surrounded by the beautiful species mentioned above, while between the Diamond-fields and Cape Town many black-and-white Chats (? sp.) frequented the veldt, and at one of the stations *Hirundo cucullata* had its nest on the dwelling-house. At another station near a river I put up two Secretary-birds, which flew away in a leisurely manner looking like a pair of Herons; but some members of the party had seen examples previously.

During our final three days' stay at Cape Town I was able to make two ornithological excursions. The first was to the Cape Flats, once more in company of Mr. Fairbridge, when we added to our former list *Circus ranivorus, Estrilda astrilda, Pyromelana oryx, Bradypterus brachypterus, Ardea melanocephala, Serinus flaviventris,* and *S. canicollis.* In a low shrub we found a nest of the last species with fresh eggs, and so tame was the female that she continued to sit on them while we examined her, and only pecked our fingers. I purposely dislodged her to look at the eggs, but she never left the edge of the nest, and fought and uttered cries with the utmost determination. When my hand was withdrawn she settled again upon the eggs at once—a wonderful exhibition of fearlessness. *Hirundo cucullata* and *Cotile paludicola* were also observed. Leaving the Flats we proceeded to the Racecourse near Kenilworth, where a pair of Secretary-birds were reported to be breeding. They were not, however, to be seen and we had to content ourselves with a sight of the lovely flowers—terrestrial orchids, heaths, *Sparaxis, Morea, Lachenalia,* and so forth, which were now beginning to cover the ground in profusion. *Macronyx capensis* and *Anthus pyrrhonotus* were the only birds of importance noticed.

The next day a small party was conducted to the top of Table Mountain by Mr. W. L. Sclater, ascending to the Reservoir and returning by the Skeleton Gorge. The Proteas were nearly past, but the heaths were still in full beauty and other plants were now in flower. We had the good fortune during the ascent to fall in with a pair of the beautiful little Sun-bird *Anthobaphes violacea*; the cock was sitting on a shrub and the hen flitting about the bushes, whence she readily flew to her nest as we watched her. It was an oval shell composed of bents and the like, and was not yet lined. *Saxicola familiaris* was seen upon the higher mountain-slopes and *Laniarius ferrugineus* was heard in the Skeleton Gorge.

We left South Africa by the 'Armadale Castle' on September 20th with much regret, and had a most delightful homeward journey, though uneventful with regard to birds, except for the fact that we were bringing home two examples of *Gyps kolbii* and a pen of *Spheniscus demersus*, which were crammed by hand with fish and throve well. A small Petrel was caught on board, but disappeared before I could see it; and near Madeira a specimen of *Motacilla raii* visited us on its autumnal migration. The other birds observed did not differ from those seen on the outward voyage.

In conclusion, I wish again to draw attention to the fact that this article contains but an account of the birds observed in a somewhat hurried winter-journey, and will not, of course, bear comparison with the excellent results obtained by our energetic fellow-workers on the spot, who will, nevertheless, I hope, be glad to learn the impression made by the Avifauna of their country upon an appreciative visitor.

XXII.—*Obituary.*

Capt. F. W. Hutton, Dr. Émile Oustalet, Dr. Paul Leverkühn, and Sir Robert Lloyd Patterson.

Capt. Frederick William Hutton, one of the most distinguished of our Colonial Men of Science, who was in London last summer, but, in consequence of indifferent health, did not see many of his old friends, died on his way back to New Zealand on the 27th of October last. His name is well known in the scientific world as the Curator of the Museum at Christchurch, New Zealand, and as President of the New Zealand Institute. Captain Hutton, the second son of the Rev. H. S. Hutton, was born in Lincolnshire in 1836, and was educated at the Naval Academy, Gosport. After three years' service in the Indian Mercantile Marine, he gave up his naval profession, and entered King's College, London, whence he passed into the 23rd Royal Welsh Fusiliers, becoming a captain of that regiment in 1852. He served in the Crimean War, and distinguished himself in the Indian Mutiny in 1858, having been present at the relief of Lucknow and at the defeat of the Gwalior mutineers. In 1860 he entered the Staff College at Sandhurst, and passed out sixth in the examination of 1861.

In 1865 Captain Hutton retired from his military career and emigrated to New Zealand, where he resided first in Auckland and then on the Waikato. Having a strong taste for Geology, he obtained a post as Assistant in the New Zealand Geological Survey in 1871, and removed to Wellington. Two years later he was appointed Provincial Geologist of Otago and Curator of the Otago Museum at Dunedin. Three years afterwards he was made Professor of Biology and Geology in the University of New Zealand at Christchurch, which office he held until 1893, when he accepted the Curatorship of the Christchurch Museum, a post which he occupied at the time of his death. In 1900 Captain Hutton was elected President of the Australasian Association for the Advancement of Science, and in 1904 became President of the New Zealand Institute. In 1892 he was elected Fellow of the Royal Society, while he was also a member of many other learned and scientific societies on the Continent and in the Colonies. Thus it will be seen that, after relinquishing the military profession, Captain Hutton devoted his life entirely to scientific pursuits. His work was mostly geological, and was published principally in the 'Transactions of the New Zealand Institute,' where more than one hundred papers will be found under his name. He was one of our best authorities on the extinct Moas of New Zealand, but had also an excellent knowledge of the recent Avifauna of the Colony. In 1871 he published a catalogue of its Birds, and in 1904, in connexion with Mr. James

Drummond, a general account of the Colony's air-breathing Vertebrates. To our own journal Captain Hutton contributed ten articles, and other of his ornithological papers will be found in the 'Transactions of the New Zealand Institute' and in the 'Proceedings of the Zoological Society of London,' of which he was for many years a Corresponding Member.

Dr. JEAN-FRÉDÉRIC ÉMILE OUSTALET.—The name of ÉMILE OUSTALET is familiar to most of us as that of the President of the International Ornithological Congress of 1900, an office which he gave over personally to Dr. Bowdler Sharpe on the re-assembling of the last Congress at Cambridge in 1905. Dr. Oustalet was born at Montbéliard in August 1844. He entered the service of the great French Museum in the Jardin des Plantes as Assistant Naturalist in 1875, and retained his connection with it until the day of his decease. In 1900, upon the death of Dr. Alphonse Milne-Edwards, he was appointed Professor of Mammalogy, with the special charge of the well-known Menagerie of that Institution, and was also made Sub-Director of the École des Hautes-Études, both of which posts he held at the time of his decease. Dr. Oustalet, as we have been informed, commenced his zoological work with the study of Insects, but transferred his attention to Birds when he was appointed to his first post at the Jardin des Plantes. One of his most important publications was that on the Birds of China, which he prepared in connexion with Père David, the well-known scientific missionary to that country. It was issued in 1877, in two volumes, the second of which contains the Plates, and still remains our best book of general reference on the Avifauna of the Chinese Empire. This was followed in 1879 by a catalogue of the birds obtained by the French Explorer Marche on the Ogové River in Gaboon. In 1893, Dr. Oustalet was associated with Dr. Milne-Edwards in preparing an important memoir on the extinct Birds represented in the Muséum d'Histoire naturelle. This was a volume commemorative of the Centenary of the foundation of the Museum of Natural History, an event which took place that year. In the following year Dr. Oustalet prepared a Catalogue of the Birds collected during the celebrated journey of Prince Henry of Orléans through Turkestan, Tibet, and Western China. Another important memoir followed, 'On the Birds of the French Colonies of Cambodgia, Laos, Annam, and Tonquin,' of which the French National Museum possesses an unrivalled series. We have only lately recorded the completion of this excellent piece of work (see 'The Ibis,' 1905, p. 488).

Besides the above-mentioned publications, Dr. Oustalet was the author of many short papers and notices on ornithological subjects. He was truly indefatigable in his exertions to promote the advancement of zoological science. As one of us can testify from long personal acquaintance, Dr. Oustalet was a most kind and obliging friend, and always ready to take any amount of trouble in assisting his foreign correspondents who came to visit him at the Jardin des Plantes. Dr. Oustalet died, rather suddenly, at St. Cast (Côtes-du-Nord) on the 26th of October, 1905. It will be difficult to replace him in the post which he filled so well.

Dr. Paul Leverkühn.—We have the sad duty of reporting the sudden death of one of the youngest members of our Union—Hofrat Dr. Paul Leverkühn,—who succumbed to an attack of typhoid fever on December 4th, 1905, at Sofia (Bulgaria).

He was born on the 12th of January, 1867, in Hanover, and was the eldest son of the "Geheime Regierungs- und Schulrat" Karl Leverkühn, by his marriage with Louise Grisebach, a relative of the celebrated Professor of Botany of Göttingen. From 1886 to 1891 Leverkühn studied at Kiel, Strassburg, Freiburg-i.-B., and München. At the last-named University he was made "Doctor Medicinæ" (May 1891), and after having served as an "Einjähriger" in the 15th Regiment of Field-Artillery in Strassburg, attained the rank of "Stabsarzt der Reserve."

From his earliest boyhood Leverkühn was profoundly interested in Natural History, especially Ornithology, being no doubt influenced by his acquaintance with the brothers R. and W. Blasius of Brunswick and with Amtsrat A. Nehrkorn of Riddagshausen, the well-known Oologist. From this friendly intercourse originated the interesting book 'Fremde Eier im Nest' (1891), which may be called the most remarkable among the numerous ornithological papers and pamphlets which Leverkühn published in various scientific periodicals. He was also a contributor to the 'Neue Naumann' (see the article on *Upupa epops*), and was for many years an active member of the Council of the "Deutsche Verein zum Schutze der Vogelwelt."

Leverkühn also worked actively in Bibliography, and was famed for his extensive knowledge of literature, especially in relation to ornithology. In this capacity Leverkühn loved to work out most carefully biographies, even of men little known to science, and to republish long-forgotten pamphlets (*e. g.*, 'Der philosophische Bauer, von Johann Andreas Naumann'). An important paper in this line is the Biography of the two Naumanns, father and son, in the 'Neue Naumann.'

It is very regrettable that Leverkühn was not able to see his most important piece of work finished, namely the new Museum of Natural History in Sofia, which was so far advanced that it was intended to open it to the public in the course of the present year. Our Member, Prince Ferdinand of Bulgaria, an ardent lover of Science, secured Leverkühn's services in 1892 to carry out his scientific plans. Soon after his arrival in Sofia (May 1893), Leverkühn was nominated "Director of the Library and Scientific Institutions," but still kept his original position as Private Secretary to the Prince for H.H.'s German correspondence. In consequence of this position, Leverkühn always travelled along with the Prince, and was, besides, frequently entrusted with missions of a confidential nature. All these duties, of course, occupied a good deal of time, and it is really marvellous how Leverkühn managed to do much literary work besides, and even to compose orchestral music.

At his ten-years' jubilee (1904), in acknowledgment of all his faithful services, Leverkühn received the title of "Hofrat" from the Prince, who also made him a Knight. With honours of this kind Leverkühn was amply provided—it is stated that two velvet cushions with twenty-one Orders on them were carried behind his coffin. The Prince and all the notabilities of Bulgaria were present at the funeral ceremony, which took place in the German Evangelical Church at Sofia.

Besides such honours, Leverkühn was a Corresponding Member of many scientific Societies, amongst others of the British and American Ornithologists' Unions and of the Zoological Society of London.

A full memorial of him has been published by Otto Taschenberg (see 'Leopoldina' for December 1905, pp. 109–111).—O. F.

Sir Robert Lloyd Patterson, D.L., of Holywood, Co. Down, a Member of our Union, died on January 29th, 1906, aged 69 years. In him Belfast has lost one of her most valuable public men, both from the commercial and from the scientific point of view, and certainly the most eminent in that department of knowledge which interests both parties. He was the son of Robert Patterson, F.R.S., author of 'Zoology for Schools,' &c., and was himself twice President of the Belfast Chamber of Commerce, as well as of the Belfast Natural History and Philosophical Society, to the 'Proceedings' of which he was a frequent contributor. Successful in business, he retired in 1886, and was knighted by the Lord-Lieutenant of Ireland in 1902 for his public services. The keen interest which he took in the establishment of "The Patterson Museum"—so-called after his father—was shown in many ways; and he presented to this important educational adjunct of the Belfast "People's Palace" many specimens of mammals and birds. In the 'Irish Naturalist' appear several of his ornithological notes, while he was the author of 'The Birds, Fishes, and Cetacea of Belfast Lough,' of which two editions were issued.

Among a more or less purely utilitarian class in Belfast he stood out prominently as a broad-minded man of wide sympathies, anxious to popularize knowledge, and always ready to give his time and money for the promotion of Natural Science.—R. M. B.

XXIII.—*Notices of recent Ornithological Publications.*

[Continued from p. 212.]

34. '*Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. iv. No. 2. December 1905.]

The main article in this number is that on the Regent Bird (*Sericulus melinus*) by Mr. R. Phillipps, in which he gives details of the successful hatching of two young birds, and discusses the question of the possible polygamy of the male. He also makes the important correction that the bowers which he formerly attributed to males are constructed by females, and that the males do not make two kinds of bowers. Mrs. Howard Williams writes on the nesting of *Munia pectoralis*, Mr. Teschemaker on that of the Green Avaduvat.

35. *Dresser's* '*Eggs of the Birds of Europe.*'

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser. Pt. II. London: December 1905. 4to. Pp. 33–68; 5 pls.]

The second part of Mr. Dresser's work on European Oology (see above, p. 192) has now been published, and contains his account of the Vultures, the Kites, the Honey-Buzzard, nine species of *Phylloscopus*, eight of *Hypolais*, and two of *Aëdon*. The eggs figured are those of *Vultur monachus*, *Neophron percnopterus*, *Gypaëtus barbatus*, *Milvus ictinus*, *M. ægyptius*, the Phylloscopinæ (*Regulus*, *Phylloscopus*, *Hypolais*), and *Aëdon*.

Mr. Dresser's knowledge of the distribution of species is a great feature in the letterpress, while the debt under which he lies to Mr. Zarudny is evident in the case of many of the Eastern forms. We find little to add to the information given, except that the Fire-crested Wren breeds as early as April in Southern France, and that the nest of the Chiffchaff is much more commonly found in bushes and low copse-wood in England than the author supposes. The plates are good examples of the three-colour process, though the redder tint of the Fire-crested Wren's eggs, as opposed to those of the Golden-crested, is not sufficiently pronounced.

36. *Dubois on the Birds of the Congo State.*

[Remarques sur l'ornithologie de l'État Indépendant du Congo, suivies d'une liste des espèces recueillis jusqu'ici dans cet État. Par le Dr. Alph. Dubois. Ann. du Musée du Congo, tome i. fasc. 1. Bruxelles : Spineux et Cie., 1905. Large 4to. 36 pp.; 12 pls.]

The Museum of the Congo Free State, housed at Tervueren, near Brussels, for the present, contains the collections in various branches of Natural History formed by the officials of that State in various parts of its extensive area. In this memoir M. Alphonse Dubois, Conservator of the Royal Museum of Natural History of Belgium, gives us an account of some of the new or lately described species of birds of the Congo, accompanied by coloured illustrations, and also by a complete list of the birds of Congo-land of which specimens have reached the Museums of Tervueren and Brussels.

The species described for the first time are *Barbatula rubrigularis* (from Katanga), *Ispidina leopoldi* (Lake Leopold), *Pseudospermestes* (gen. nov.) *goossensi*, and *Francolinus nahani* (Popoie).

The species figured are *Barbatula rubrigularis, Pachycoccyx validus, Turacus schutti, T. emini, T. sharpei, Bycanistes leucopygius, Lophoceros granti, Ispidina leopoldi, Terpsiphone ignea, T. speciosa, T. melanura, Pseudochelidon eurystomina, Melanopteryx weynsi, Francolinus nahani, Huhua leucosticta,* and *Strix cabræ.* The list of Congo species contains 483 names, for each of which the locality is given. The rare and curious form *Pseudochelidon* is from the district of Ituri, which is far away from Gaboon, the *patria* assigned to it by Hartlaub—its original describer. But we know that the localities of the "*Maison Verreaux,*" from which Hartlaub received his specimen, are not always to be relied upon.

We thank M. Dubois for this valuable contribution to the Ethiopian Avifauna, but, as he himself admits, our knowledge of the birds of this vast tract of land is still quite in its infancy.

37. *Hauer, Soos, and Csörgey on the Rook.*

[Die landwirthschaftliche Bedeutung der Saatkrähe. Reprinted from Aquila, xi. (1904), pp. 353–359, with two maps and a table.]

This memoir consists of three articles, in Hungarian and German, on the old question of the utility of the Rook, written for the Hungarian Central Ornithological Office at the instigation of Herr Otto Herman, who, in his Preface, emphasizes the need of checking laboratory work by field-observations. Herr B. Hauer opens the discussion with an account of a full year's investigation conducted on his estate at Kisharta during 1902, when he examined the contents of the stomachs of a large number of birds. His conclusion is that the Rook is a true friend to the farmer; it may do a little harm in spring and autumn, but this is far outweighed by the destruction of worms, insects, and grubs injurious to the crops. Moreover, the grain found in the stomach may often be obtained from animals' droppings or stack-refuse, as is invariably the case in winter. Herr L. Soos, after premising that observers vary greatly in accuracy, and that returns from districts only a few miles apart often acquit or condemn the Rook *in toto*, comes to the same conclusion as Herr Hauer, and elaborates the views held in different parts of the country, with the aid of an explanatory map. He thinks, however, that damage may be done to maize, especially in the south. Herr T. Csörgey is even more emphatic as to the necessity of obtaining and tabulating information during every month of the year. He advocates the use of circulars on which the names of observers, dates, and other particulars are to be carefully recorded.

38. *Herman on Sight in Birds.*

[Vom Blick des Vogels. Von Otto Herman. Aquila, xi. (1904), pp. 360–368. (Written in Hungarian and German.)]

Discussions having arisen as to the power of sight in birds, Herr Herman has published a contribution to our knowledge of the subject, in which he draws his conclusions from Crows, Raptorial birds, Shrikes, Terns, and so forth. The range of sight was found to vary from two to twenty-five metres, or a much greater distance in the case of Vultures, but no absolute conclusions should be drawn from the cases mentioned without a prolonged enquiry.

39. *Herman and Csiki on the Food of Birds.*

[Von der Nahrung der Vögel. Zwei Abhandlungen.—I. Nahrung der Vögel. Von Otto Herman. II. Positive Daten über die Nahrung unserer Vögel. Von E. Csiki. Reprinted from Aquila, xi. (1904), pp. 257–269. (Written in Hungarian and German.)]

At the Third Ornithological Congress, held at Paris in 1900, the Section of Economic Ornithology and Bird-preservation reported in favour of urging all countries and even their governments to take up seriously the subject of the utility or harmfulness of birds, as being of the greatest economic importance. It was urged that enquiries should be instituted on regular business lines, that migratory and non-migratory species alike should be observed during every month of the year and for several years in succession, that the contents of their stomachs should be carefully noted, and lists prepared of their action towards the farmer's crops. The authors are proud to say that Hungary is in the van of the movement, and that other countries are following, though Britain has not as yet announced its adhesion; at the same time they wish to advance with caution, while never losing sight of their goal. The second article gives a detailed account of the examination of a considerable number of species.

40. *'Irish Naturalist.'*

[The Irish Naturalist. A Monthly Journal of General Irish Natural History. Vol. xiv. Nos. 1–12 (1905). Eason & Sons, Dublin.]

Among the ornithological articles in this journal may be noticed Mr. Alexander Williams's record (p. 71) of the partiality for ripe oats shown by a large flock of Herring-Gulls on the Kerry coast. That Gulls in captivity could exist upon grain was, of course, known from the experiments of John Hunter, but this predilection for ripe grain in a place where animal food was, presumably, plentiful seems somewhat novel. Mr. Robert Warren mentions the acquisition of an example of the Tree-Sparrow from Belmullet, Co. Mayo; it is the first time that this species has been met with on the western side of Ireland since its identification by Mr. H. M. Wallis, in 1886, on Arranmore Island, off Donegal. Mr. R. J. Ussher contributes an interesting paper on the birds of the Connaught loughs, where the Marsh-Harrier may still be seen. Numerous records of Quails indicate that this migrant is returning to Ireland, and breeding there in larger numbers than of late years. The most important novelty is the well-authenticated breeding of the Common Scoter in Ireland; a discovery due to the watchfulness and patience of Major Herbert Trevelyan, and originally announced by him in 'The Field.' On pp. 201–204 is an interesting notice by Mr. Edward Williams (whose recent death is a great loss to Irish zoology) on the occurrences of the Greenland and the Iceland Falcons in Ireland during the spring of 1905 in unusual numbers. The former species was quite abundant, and since the publication of the instances mentioned above others have been recorded. That Corncrakes should be met with in winter is not very unusual, but that an example should have attracted attention to its detriment by "craking" on the 31st of January, 1905, deserves notice. The chronicler, Mr. Robert Patterson, remarks on this instance, and on another Corncrake seen running across the road near Belfast on the 19th of February, that "it will be noted that neither of these birds was hibernating"; and if our opinion afford any satisfaction we heartily agree that Crakes which "crake" and Crakes which run are not in that state of torpor which is associated with "hibernation" on this side of the Irish Sea — H. S.

41. *Journal of the South African Ornithologists' Union.*

[The Journal of the South African Ornithologists' Union. Vol. i. No. 2. December 1905.]

We have now the pleasure of announcing the issue of the *second* number of the Journal of our sister Union in South Africa (*cf.* 'The Ibis,' 1905, p. 635), which is edited by Mr. A. Haagner with the assistance of an editorial Committee. The principal articles are by Mr. James G. Brown on the water-birds of Zwaartkops River, near Port Elizabeth, by Mr. Haagner on the birds of the vicinity of Modderfontein, Transvaal, and by Mr. A. Duncan on the difficult question of the seasonal changes of plumage in the Bishop-Birds (*Pyromelana*). Three good photographic plates prepared by Mr. R. H. Ivy, of Grahamstown, represent *Anthropoides paradisea*, *Strix capensis*, and the Knysna Plaintain-eater (*Turacus corythaix*) with its nest and eggs. Other notes and notices follow.

42. *Kelsall and Munn on the Birds of Hampshire.*

[The Birds of Hampshire and the Isle of Wight. By the Rev. J. E. Kelsall, M.A., and Philip W. Munn. London, 1905. 8vo. Pp. i–xliv, 1–371; 19 illustrations and map. Price 15*s*. net.]

This volume supplies a long-felt want. The neighbouring counties of Wilts and Dorset have each had their ornithological chronicler, but Hampshire birds have as yet only been known from lists in general histories, or discussed from the point of view of separate districts. In one sense few counties have been more fortunate, as from the time of Gilbert White—not to mention Christopher Merrett—to the present day, Hampshire has been a favourite hunting-ground for ornithologists, while the New Forest alone sufficiently accounts for their sustained interest in the county. Still there was ample room for a book which should weave into one the various scattered threads of literature, and such a volume now lies before us, with the accompaniment of a full bibliography, and some account of the former authors who have written on Hampshire birds. Mr. Kelsall, one of the joint authors, himself published an annotated list of species in the 'Proceedings of the Hampshire Field Club' for 1898, from which this volume may be considered to have developed, with the aid of Mr. Munn. Both our fellow-members are resident in the county, and are therefore well qualified for the work which they have undertaken. Naturally they have nothing very new to tell us of so well-trodden an area, but the letterpress will be found to contain many interesting records of former years, and notes on the present status of the species.

The total number of "Hampshire Birds" recorded is 294, besides those which have been introduced, of which the Wild Turkey is the most remarkable. A list of the birds of Selborne is given separately, and an account of the "Protection" afforded to birds in the county is added to the Introduction.

43. *Mascha on the Structure of Wing-feathers.*

[The Structure of Wing-feathers. By Dr. E. Mascha. Smiths. Misc. Coll. iii. pp. 1–30 (1905).]

This is an elaborate memoir on the structure of the wing-feathers of birds, prepared by Dr. Mascha under the superintendence of Prof. R. v. Lendenfeld, of Prague. It has been translated from the German original, which is to be published in the 'Zeitschrift für wissenschaftliche Zoologie.' The microscopical structure of the wing-feathers is fully described and illustrated by a series of 16 well-drawn plates. The conclusions arrived at are set out in a summary of results. We observe that the phraseology of Nitzsch's 'Pterylographie' is not adhered to, and that the English translation of his standard work on this subject is not mentioned in the List of authorities.

44. *Miller on Birds from Sinaloa, Mexico.*

[List of Birds collected in Southern Sinaloa, Mexico, by J. H. Batty during 1903–4. By W. D. Miller. Bull. Am. Mus. N. H. xxi. p. 339 (1905).]

This is an account of a large collection made by Mr. J. H. Batty in the southern part of the Mexican Province of Sinaloa in 1903–4, with short but apposite field-notes by the collector. The collection contains 1164 specimens, which are referred to 160 species. Of many of them large series were obtained, *e. g.* 129 of *Lophortyx douglasi*, 90 of *Cassiculus melanicterus,* and 74 of *Icterus pustulatus.* The author appears to be a full-fledged Trinomialist, most of his species having three names. Two new subspecies, designated *Amazona albifrons nana* and *Amazilis beryllina viola,* are apparently based upon somewhat slender characters. When Ornithologists use such terms as "*Amiophila*" and "*Tangavius*" some reference should be given to enable their "less advanced" brethren to trace the origin of the names. They are not to be found—even in the 'Check-list,' so far as we know.

45. *New York Zoological Society's Report.*

[Ninth Annual Report of the New York Zoological Society (for 1904). New York, 1905. 8vo. Pp. 1–271; 75 illustrations.]

Notable events in the history of this Society are the approaching or actual completion of the large new House for small birds, of the Ostrich—or rather Ratites'—House, and of the Aviary for Pheasants and Doves, which will contain an exceptional number of species of many kinds. Apart from the announcement of these additions, we are informed in this Report of the progress of game-protection, of the various Orders of birds in the Park, of the exhibition of wall-cases containing anatomical specimens, nests, and eggs, and of course of much concerning other classes of living creatures. The Curator of Birds, Mr. C. W. Beebe, is the author of an article entitled "The Ostriches and their Allies," which is furnished with no less than seventeen illustrations, and discusses the group from all points of view. Apparently, however, he has not discovered that the African Ostrich is a strict monogamist.

46. *Nordenskjöld on Antarctic Birds.*

[Antarctica; or, Two Years amongst the Ice of the South Pole. By Dr. N. Otto Nordenskjöld and Dr. Joh. Gunnar Andersson. London: Hurst & Blackett, Ltd., 1905. 1 vol., 8vo.]

This well-written account of the remarkable adventures of the Swedish Antarctic Expedition of 1901–3 will be read with pleasure by all our friends who are interested in Polar exploration. After the loss of the 'Antarctic' and the dispersal of its crew into three separate winter-quarters, in which the greatest hardships were encountered, the whole party was almost miraculously re-united and brought back safely by the exertions of the Argentine Government. But what induces us to bring the work to the notice of the readers of 'The Ibis' is the occurrence of numerous notices and illustrations of Penguins and other Antarctic birds throughout the narrative. Those relating to the Penguins and their strange ways (see pp. 48, 51, 52, 57, 266, 312, 418, 498, 561) are many and of special interest, but Skuas and Cormorants also receive due attention. The Penguins now living in the South Shetlands and adjacent lands visited by the Expedition are of four kinds, of which the three species of *Pygoscelis*—*P. adeliæ*, *P. antarctica*, and *P. papua*—appear to exist in almost incredible numbers, while the Emperor (*Aptenodytes forsteri*) is an occasional straggler. But a remarkable discovery was made in Seymour Island of the fossil remains of an extinct bird of this family "considerably larger than the largest form now living," *i.e.* the Emperor. There is a capital drawing by Mr. E. Lange (p. 452) of a Giant Petrel killing a young Penguin while the unfortunate parents look on with horror and dismay. Our ornithological friends will be delighted with this volume.

47. *Oberholser on the Names of certain Genera of Birds.*

[Notes on the Nomenclature of certain Genera of Birds. By Harry C. Oberholser. Smiths. Misc. Coll. vol. iii. pp. 59–68 (1905).]

Mr. Oberholser proposes to change the seventeen generic names of birds given in the first column of the subjoined list, and to employ in their places the names given in the second column :—

	Name to be rejected.	Name to be substituted.
1.	*Bellona* Muls. & Verr.	*Orthorhynchus* Lac.
2.	*Dromæus* Vieill.	*Dromoceius* Vieill.
3.	*Hydrornis* Milne-Edw.	*Dyspetornis* (nom. nov.).
4.	*Nænia* Boie	*Inca* Jard.
5.	*Gnathositta* Cab.	*Ognorhynchus* Gray.
6.	*Dasyptilus* Wagl.	*Psittricas* Less.
7.	*Nanodes* Vig et Horsf.	*Euphema* Wagl.
8.	*Dendrornis* Eyton	*Xiphorhynchus* Sw.
9.	*Xiphorhynchus* Sw.	*Xiphornis* (nom. nov.).
10.	*Sharpia* Boc.	*Notiospiza* (nom. nov.).
11.	*Malacopteron* Eyt.	*Horizillas* (nom. nov.).
12.	*Hedymela* Sund.	*Ficedula* Briss.
13.	*Chenorhamphus* Oust.	*Conopotheras* (nom. nov.).
14.	*Helminthophila* Ridgw.	*Vermivora* Sw.
15.	*Tiaris* Sw.	*Charitospiza* (nom. nov.).
16.	*Coturniculus* Bp.	*Ammodramus* Sw.
17.	*Ammodramus* Sw.	*Ammospiza* (nom. nov.).

In case any of our readers should wish to follow Mr. Oberholser's lead and adopt the suggested alterations, we would ask them to study carefully the reasons given for making the changes, which, in our opinion, are not always sufficient. For instance, "*Bellona*" is rejected because it has been previously used for an "ornithicnite." But an "ornithicnite," if we are not mistaken, is a fossil footprint of a bird, not a bird itself, and there is no rule that a fossil footprint and a bird may not be called by the same name.

It is proposed to remove the name *Xiphorhynchus* of Swainson to the group usually called *Dendrornis*, because, although Swainson expressly states that *X. procurvus* is the type of his genus (Zool. Journ. iii. p. 354), he "defeated his purpose by allowing the previous publication of *Xiphorhynchus* in combination with the name of a species of another group." We cannot subscribe to this doctrine, and we maintain that *X. procurvus* is the true type of *Xiphorhynchus*, as stated explicitly by the author when he founded the genus and defined it. Were Mr. Oberholser's view adopted, we should have to change the names of about 50 species of Dendrocolaptidæ, and produce indescribable confusion. But our "Priority-hunters" are regardless of consequences when they think that they can upset an established name. The same fallacy prevails in the case of "*Tiaris*," which, according to our view, need not be changed to "*Charitospiza*." Nor does *Tiaris ornata* require the new specific name which Mr. Oberholser has invented for it, because *Fringilla ornata* of Vieillot belongs to quite a different genus from *Fringilla ornata* Wied. We prefer the familiar name *Tiaris ornata* to the new *Charitospiza eucosma*, and shall continue to use it in spite of what Mr. Oberholser and Dr. Richmond (see 'Auk,' xix. p. 87) may say! Nor can we agree to give up *Malacopteron* because *Malacopterus* has been used in Entomology. They are not the same word, and their continued use in two different classes of animals cannot lead to any confusion. Who would like to call our Pied Flycatcher *Ficedula ficedula ficedula*, as Mr. Oberholser suggests? Not the Editors of 'The Ibis,' we are sure, nor many of its readers, we suspect. We prefer to stick to the good old Linnean name *Muscicapa atricapilla*. In the first place, many Ornithologists (Dr. Hartert, for one) do not allow the validity of Brisson's genera. In the second place, it is quite uncertain what Brisson's "Bec-figue" (the type of his genus *Ficedula*) was, and the same may be said of Linnæus's *Muscicapa ficedula*. But about *Muscicapa atricapilla* there is no uncertainty. The name has been in universal use since the foundation of the Binomial System, and cannot, in our opinion, be improved upon.

48. *Patterson on the Fauna of East Norfolk.*

[Nature in Eastern Norfolk. By A. H. Patterson. London, 1905. 8vo. Pp. 1–352; 12 col. pls. and map. Price 6s.]

The author of 'Notes of an East Coast Naturalist' sends us another small volume on the fauna of the Yarmouth district, which is not only valuable for the information it gives of the present effect of the Protection of Birds on Breydon Water and its vicinity, but also for the accounts of various worthies whose names we so often hear mentioned in connexion with the Ornithology of Norfolk. Beginning with an autobiography, the author passes to general observations on the fauna, which contain much of interest with regard to the comparative abundance of species, migration (map), occurrence of varieties, wild-fowling, the sole remaining local duck-decoy (at Fritton), works on the avifauna of the district, and the like. This is followed by an annotated catalogue of the mammals, birds, fishes, reptiles, amphibians, stalk-eyed crustaceans, and mollusks of Eastern Norfolk. We can heartily recommend the book to all lovers of Nature, but wish that the whole of Broad-land had been included, in the absence of which the author fails at times to give a correct impression of the status of some of the species of birds. The coloured plates are rather brilliant, but are a pleasant change after a surfeit of photographs.

49. *Pungur on the Migration of the Swallow.*

[Der Herbstzug der Rauchschwalbe in 1898 in Ungarn. By Julius Pungur, with a Preface by Otto Herman, and Notes on the Weather at the Time of Migration by Jacob Hegyfoky. Aquila, xi. (1904), pp. 1–250, 2 maps. (Written in Hungarian and German.)]

Our friends in Hungary are at the present time most active in collecting information on the subject of migration, and now send us a very long and detailed paper on the autumnal movements of the Swallow in 1898, as a complement to the account of its spring-movements previously published. Their methods have already been noticed in 'The Ibis' (1905, p. 634), and recall to our minds those of Mr. Eagle Clarke, who also confined himself to a single species at a time. But the details are worked out with even greater elaboration, and the results attained are depicted on two maps marked in squares (quadrate). The extreme and mean dates are deduced, and "formulæ" given for the separate regions, besides many other details. Great attention is paid to the height of the place of observation, its geographical position and surroundings, while tabulated results are constantly added, and a comparison instituted between the dates of arrival and departure. This is, however, but a rough sketch of a most elaborate piece of work, which must be consulted by every student of the subject for himself.

50. *Reichenow's 'Birds of Africa.'*

[Die Vögel Afrikas, von Anton Reichenow. Dritte Band, zweite Heft. Neudam: J. Neumann, 1905. Price £3 10*s*. net.]

The issue of the second part of the third volume of Reichenow's 'Vögel Afrikas' completes one of the most important ornithological works of the present epoch. The whole work, now brought to a successful conclusion, consists of three handsome volumes in large octavo, of from 600 to 800 pages each. The thirty coloured plates and the maps, when bound separately, make a fourth volume.

In the second half of the third volume the author concludes the Pycnonotidæ, and gives us his account of the Zosteropidæ, Nectariniidæ, Certhiidæ, Paridæ, and Sylviidæ, which are the final Family.

Thus the three volumes together contain an account of 2381 species belonging to the continental Ethiopian Avifauna, Madagascar (quite wisely, as we think) being altogether excluded. The Supplement, which concludes the work, treats of the discoveries made during the last five years while the work has been in progress. It commences with a short history of the principal collections received during that period, and gives a list of the titles of the books and papers in which they have been described. These are upwards of 200 in number, and follow upon the list of more than 1000 authorities on African birds already given in the first volume.

In concluding our notice of the final part of this exhaustive work we venture to offer the author our best congratulations on the great success that has attended his labours. Dr. Reichenow's 'Vögel Afrikas' will long remain the principal authority on the subject to which it refers, and constitutes a firm base on which all future investigators of the large and varied Ethiopian Avifauna will necessarily build their additions.

51. *Report of the Bishop Museum, Honolulu.*

[Occasional Papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History. Vol. ii. No. 3. Director's Report for 1904. Honolulu, 1905. 62 pp.]

Observers in a partially-explored country have much in their favour, so that we are not surprised to find many facts of the greatest interest in this Report. Following upon information of the progress made by the Bishop Museum and the acquisition of the Henshaw and Menage Collections, we have an article on a collecting-trip to the Waianae Mountains in Oahu made by Messrs. Bryan and Seale during January, February, and March, 1901. Several introduced species, such as *Phasianus torquatus, P. versicolor,* and *Alauda arvensis,* were found to be plentiful, while the nest and egg of *Chasiempis gayi* (differing from Rothschild's description), nests of *Himatione sanguinea* and *Chlorodrepanis chloris,* and the hitherto unknown nest and eggs of *Oreomystis maculata* were secured. Mr. Bryan also describes the nest and eggs of *Heterorhynchus wilsoni* (new to science), of *Chlorodrepanis virens,* and (with considerable doubt) of *Loxioides bailleui,* all from Hawaii; a curious undetermined nest made of the lava-strands called Pele's hair; and the breeding of *Asio accipitrinus sandvicensis.* Lastly, Mr. Wilder writes on American birds observed in the Hawaiian Islands. Illustrations are given of the nests of *Chasiempis gayi*, *Oreomystis maculata*, *Chlorodrepanis virens*, *Heterorhynchus wilsoni,* and that attributed to *Loxioides bailleui.*

52. *Richmond on a new Swiftlet.*

[Description of a new Swiftlet from Mount Kina Balu, Borneo. By Charles W. Richmond. Smiths. Misc. Coll. ii. p. 431 (1905).]

A supposed new species of *Collocalia* is described as *C. dodgei.* The type, in the U.S. National Museum, occurred in a small collection of birds made by Messrs. Goss and Dodge during a recent expedition to Mount Kina Balu, Borneo. It is most nearly allied to *C. linchi,* but is smaller.

53. *Riley on a new Ground-Dove.*

[A new Subspecies of Ground-Dove from Mona Island, Porto Rico. By J. H. Riley. Proc. U.S. Nat. Mus. xxix. p. 171 (1905).]

The new subspecies from Mona Island, between S. Domingo and Porto Rico, is named *Columbigallina passerina exigua.* We prefer to call the genus *Chamæpelia,* agreeing with Count Salvadori's dictum on this point (see Cat. B. xxi. p. 472).

54. *Sclater's 'Birds of South Africa.'*

[The Birds of South Africa, commenced by Arthur Stark, M.B.—Vol. IV. Game-birds, Shore-birds, and Sea-birds. By W. L. Sclater, M.A., F.Z.S., Director of the South African Museum, Cape Town. London: R. H. Porter, 1906. 8vo. 546 pp.; 168 illustrations. Price 31*s.* 6*d.* net.]

In 1903 ('Ibis,' 1903, p. 623) we recorded the issue of the third volume of the "Birds" belonging to the new series of Handbooks of the Fauna of South Africa. When Mr. Sclater planned this work he entrusted the preparation of the portion relating to the Birds to the late Dr. Stark (an excellent field-naturalist, well acquainted with South-African Ornithology), who wrote the first volume. Dr. Stark, however, as we know too well, lost his life while attending the sick at the Siege of Ladysmith, and Mr. Sclater was constrained to write the remaining volumes himself, much assisted, however, by Stark's note-books, which were kindly placed at his disposal.

We have now before us the fourth and last volume of the 'Birds of Africa,' for which Mr. Sclater tells us that he is "alone responsible," although he has been able to make occasional use of Stark's field-notes. In this volume is included the account of 251 species of Game-, Shore-, and Water-birds of South Africa, making 814 species in all for the portion of the Continent south of the Zambesi. It must not, of course, be supposed that our knowledge of the Birds of this vast area is by any means thus completed. Many portions of the enormous district treated, which is probably larger than Europe, remain quite unexplored so far as their Bird-life goes. This is evident from the fact that Mr. Sclater has already been obliged to publish a Supplement to the 'Birds of Africa,' as noticed in our last number (see above, p. 206). It will be said, perhaps, that this Supplement might well have been added to the present volume of the work. This is, no doubt, true, but when an author is domiciled six thousand miles from his publisher and printer, it is not always possible to arrange such matters just as one could wish.

The work as it stands, however, will form a most convenient basis for future labourers to build upon, and will, no doubt, be very convenient for the energetic votaries of our special branch of Zoology in South Africa, who have, as we know, already established a "South African Ornithologists' Union," in order to bring together those interested in the study of birds in the various parts of the neighbouring Colonies. They have also instituted a new Journal to record the results of their observations. We have no fear, therefore, for the future progress of the study of Birds in this portion of the British Empire.

55. *Scott's Voyage of the 'Discovery.'*

[The Voyage of the 'Discovery.' By Captain Robert F. Scott, C.V.O., R.N. In two volumes. London: Smith Elder & Co., 1905. Price £2 2*s*. net.]

The narrative of the voyage of the National Antarctic Expedition does not, perhaps, come strictly within the category of "Ornithological Publications." But Captain Scott makes so many allusions to birds in his text, and gives us such excellent illustrations of Antarctic bird-life, that we feel bound to mention the work. Besides, in an appendix to the second volume will be found an excellent summary of the knowledge acquired of the Birds of the Ross Sea and Victoria Land, written by Dr. Edward A. Wilson, which clearly necessitates a notice in this Journal.

Amongst the many attractive bird-drawings from Dr. Wilson's facile pencil interspersed in the narrative are "Scrambling for Scraps" and the "Penguins' Road" in the first volume. It is, indeed, wonderful that these "pushing, energetic little birds" should choose to mount the steep and slippery hill-sides to a height of a thousand feet to make their nests. In the second volume the Skuas and their ways are well shown at p. 176. It was known to us that Penguin-flesh was much appreciated in the high latitudes of the South, as affording an abundant supply of succulent meat, but it was quite a new discovery that the "unclean carrion-feeding Skua" might be placed in the same category. In March 1903 the sportsmen of the 'Discovery' shot over five hundred of these birds to be put in store for the winter, and to form a change for the "regulation-seal." "The legs and wings of the Skua are skinny, but the breast is full and plump." Another luxury for the winter was the egg of the Adelia Penguin. In the second volume are several excellent illustrations of this bird and its nesting-places. The satisfaction felt by the gatherers of their eggs is quite manifest in their faces.

In Dr. Wilson's appendix to the second volume will be found a full summary of the ornithological results arrived at by the Expedition. But as he has in preparation a special volume on the Vertebrates of the Antarctic Lands and Seas, which is nearly ready for publication, we may defer our remarks on this subject to a future occasion. There is no doubt, however, that, as Dr. Wilson himself remarks, the position of the headquarters of the Expedition in 80° S. lat. was, "so far as *Birds* are concerned," too far south. In the pack-ice and during the cruise along the coast of South Victoria Land only twelve species of Birds were met with, and this number, "except for an occasional straggler," was reduced to three in the winter-quarters at Cape Armitage.

56. *Sharpe on the Progress of Ornithology in* 1904.

[Zoological Record, Vol. XLI. 1904. III. Aves. By R. Bowdler Sharpe, LL.D. &c. 72 pp. Price 6*s*. 1905.]

We have again the pleasure of calling attention to the early appearance of the "Aves" of the 'Zoological Record' for 1904, and to the easy terms on which this most useful publication may now be obtained.

After a *very* short Preface, in which the progress made in 1904 by Reichenow, Ridgway, Hartert, and Shelley in four of the principal ornithological works in course of publication is mentioned, the Recorder passes to a full list of the titles of the books and papers relating to Ornithology issued during the year. They are 679 in number, the corresponding number in 1903 having been 724 and in 1902 627. We observe that this list includes the names of many slight papers which must be allowed to be of little scientific value. This, however, we consider to be no defect, as the papers may interest certain classes of readers who keep to the more popular branches of Ornithology, and like to know what is going on.

The "Subject Index" which follows is somewhat concise, but supplies references to the principal Faunistic works, and those on other matters relating to the study of Birds, by giving the author's name and the number of his paper in the "List of Titles." This we consider to be a much better plan than that of reprinting the whole title, which is the mode adopted in the International Catalogue*.

Lastly comes the Systematic Index—the most important part of the work,—in which the Orders and Families are taken from the lowest forms to the highest according to Dr. Bowdler Sharpe's arrangement, and the additions made to our knowledge of each of them during the year 1904 are succinctly stated. This is a great help to the working ornithologist, who by its use is enabled to ascertain at a glance whether any information has been added to the special subject of his studies during the year 1904. To make it still more perfect, however, an alphabetical index to the newly described species should be appended. This would occupy but few pages of print, and would, in our opinion, greatly increase the usefulness of the 'Record' to the working Naturalist.

57. *Stejneger on the Dippers and their Distribution.*

[The Birds of the Genus *Cinclus* and their Geographical Distribution. By Leonhard Stejneger. Smiths. Miscell. Coll. ii. p. 481 (1905).]

This is a somewhat rambling essay upon the Dippers and their distribution, but, like all Dr. Stejneger's writings, is worthy of careful perusal, and contains some interesting information. The author recants his former *dictum* that "the Neotropical forms" of *Cinclus* "are most like the ancestral stock," and now gives the Asiatic *C. asiaticus* and *C. pallasi* preference in this particular. The young of these species are "typically turdine" and "startlingly like overgrown fledgelings of *Sialia*," which, although confined to the Nearctic Region, has "strictly Turdine and Saxicoline affinities."

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* See 'The Ibis,' 1904, p. 650.

The various forms of *Cinclus* "now recognised by ornithologists" are catalogued in a footnote as 31 in number. It would seem that Latham's specific term *gularis* (1801) is the oldest name for the British form (until our "advanced ornithologists" have hunted out an earlier one!) and that Olphe-Gailliard in 1890 called it *europæus* (Contr. Faune Orn. Eur. Occident. fasc. xxx. p. 12), so that v. Tschusi's tender care in providing our British Dipper with a new subspecific name (*cf.* 'Ibis,' 1902, p. 353) was quite thrown away. We agree, however, with Dr. Stejneger that the distribution of the *Cincli* is a most attractive subject of study, but cannot be successfully undertaken with the inadequate material at present at our disposal.

58. *Whitaker on the Birds of Tunisia.*

[The Birds of Tunisia, being a History of the Birds found in the Regency of Tunis. By J. I. S. Whitaker, F.Z.S., M.B.O.U., &c. Two vols. 8vo. London: R. H. Porter, 1905. Price £3 3*s.* net.]

The "Cis-atlantean Subregion," as it has been appropriately called, is conveniently close to Southern Europe, and has been, for many years, a favourite resort of ornithologists who do not entirely restrict themselves to the Birds of the country in which they dwell. Numerous memoirs and papers have been published on the results of their researches, but they are scattered throughout various periodicals and, with the exception of the late Col. Irby's 'Ornithology of the Straits of Gibraltar,' there is no separate work available for general information on the subject.

It was therefore with great pleasure that we heard some time ago that Mr. J. I. S. Whitaker was preparing an account of the Birds of Tunisia, and it was with still greater pleasure that we lately received the two handsome volumes that contain the results of his labours. Tunisia is conveniently near to the author's residence at Palermo, and, as many of us know, has been a happy hunting-ground for

Mr. Whitaker during many years. No one could be found more capable of preparing an account of its ornithological treasures, and no one has had such good opportunities of examining them. Moreover, Tunis is, in fact, merely a bit of Algeria under a different government. There is no natural boundary between the two countries, and "no such difference between their physical features as to cause a diversity in their Avifaunas." Mr. Whitaker has, therefore, so far extended his subject that the 'Birds of Tunisia' makes an excellent Handbook for those of Algeria also.

In a well-written Introduction our author shews that Tunisia may be divided into four regions—(1) the "Northern," (2) the "Central," (3) the "Semi-desert," and (4) the "Desert,"—and points out their characteristic features at full length. Each of these regions appears to have certain birds peculiar to it, or more abundant in it than in any other of the regions. If we regard the Tunisian Ornis as a whole, the Larks, the Chats, and the Birds-of-Prey seem to be the most fully represented groups. Inclusive of the Owls, the Birds-of-Prey number over 40, many of them being plentiful in certain parts of the Regency.

After various other points of general interest have been discussed, Mr. Whitaker proceeds to the main part of his subject—an account of the birds of Tunisia in systematic order. As regards arrangement and nomenclature he is nearly in accordance with Dresser's 'Birds of Europe' and the 'List of British Birds' of this Union, but he employs trinomials to a limited extent "in the case of local forms or subspecies." We observe, however, that he occasionally uses "tautonyms," *i. e.* the same names for the genus and species—which, we believe, are not to be found in either of the works above quoted.

No less than 355 species (including a few subspecies) are admitted into the Tunisian Avifauna, of which about 150 are resident, 90 are summer visitors, and 90 winter visitors, while the rest are of occasional or accidental occurrence. Of each of these, the necessary synonyms and a short description succeed the name adopted. Full particulars concerning the distribution, habits, and nesting (written in an easy and agreeable style) follow.

Fourteen excellent coloured plates, executed by Mr. Grönvold, illustrate the rarer and less-known species in the present work, besides which there are pictures of some of the antique monuments and a view of the author's encampment, when on the march through the wilds of Tunisia. Two well-drawn maps, such as should always accompany a zoo-geographical work, are likewise given. The paper and printing of the two volumes leave nothing to be desired, and, in fact, we may say, without fear of contradiction, that the 'Birds of Tunisia' is a work quite "up to date," and does the greatest credit to the author and to every one concerned in it.

XXIV.—*Letters, Extracts, and Notes.*

We have received the following letters addressed to "The Editors":—

Sirs,—Looking through the volume of 'The Ibis' for 1898, I recently came across (p. 62) Graf von Berlepsch's article on the remarkable Fringilline bird *Idiopsar brachyurus*, which had then been recently rediscovered by Garlepp. At the time that the article was originally published I was engaged in cataloguing the collection of Birds in the Free Public Museum, Liverpool, and immediately took the opportunity of going over the large Bolivian and Chilian collections made for Lord Derby in the years 1841/46, by the well-known collector Thomas Bridges, which had never been systematically examined. Among them I was so fortunate as to find an unmistakable specimen of the species in question, which, from the date of acquisition, had undoubtedly been obtained by Bridges at some time prior to 1846, in the neighbourhood of La Paz, Bolivia, though the species was not made known to science by Cassin until 1866. The specimen was duly shown to Dr. H. O. Forbes, the

Director of the Museum, but no record of it was published, and I now bring it before the notice of readers of 'The Ibis' in the hope that some student of Neotropical Ornithology may be induced to explore the bird-collection of the Liverpool Museum, which contains many most interesting forms, especially among the more obscure families, such as the Tyrannidæ, Formicariidæ, and Dendrocolaptidæ.

Yours &c.,
HERBERT C. ROBINSON
(*Curator, Selangor State Museum*).

Selangor State Museum,
Kuala Lumpor,
Federated Malay States.
December 5th, 1905.

SIRS,—In the current number of 'The Auk' (pp. 26–43) Mr. Jonathan Dwight, Junr., calls attention to the small group of Gulls which occupy an intermediate position between the pure white-winged forms, *L. glaucus* and *L. leucopterus*, and those with black patterns on the primaries. In these species—namely, *L. glaucescens*, *L. nelsoni*, and *L. kumlieni*—the pattern on the primaries is of a pale slate-colour, which never disappears.

Now Mr. Dwight informs us that, though *L. leucopterus* in adult plumage is almost unknown upon the Atlantic coast of N. America, the adult of *L. kumlieni* has been repeatedly captured there, as have been more rarely the young; so that the occurrence of the latter species in Britain might be expected. It may be of interest, therefore, to recall the fact that I read a paper on *L. kumlieni* before the Royal Physical Society of Edinburgh on Jan. 21st, 1885, and exhibited the first specimen recognised in this country, which had been brought by a whaler from Cumberland Inlet to Dundee and had been purchased by me from Mr. P. Henderson of that town. I placed the bird in the collection of Mr. Howard Saunders, who verified my identification, and referred to the specimen in the 'Catalogue of the Birds in the British Museum,' vol. xxv. p. 289, and in that Museum the collection is now incorporated.

Several years after I had identified this example I obtained another from the same source, also brought to Dundee by an Arctic whaler. This I did not record at the time, but forwarded to the Museum at Edinburgh, where I thought that it would be appreciated. Unfortunately, it has been stored away, possibly as merely an Iceland Gull, and I have not had an opportunity of examining it again. At the time I felt pretty certain of my identification, which I still believe to have been correct, as it was based on the same grounds as in the case of the former specimen, accepted by our highest authority on the *Laridæ*, and among other indications on the *very pale* but perfectly visible slate-coloured pattern on the primaries—best seen when these were held up against the light. It would be interesting to learn if further specimens of this Gull have been received in Britain of late years.

I am, Sirs, yours &c.,
J. A. Harvie-Brown.

Dunipace House,
Larbert.
February 1906.

Sirs,—Count Salvadori, our great authority on the Chenomorphæ, has, I am pleased to say, done me the honour of publishing, in 'The Ibis' for 1905 (p. 528), some highly valuable remarks on my book. I sincerely appreciate the eminent ornithologist's opinions, and if I think it necessary to give a few explanations respecting some of his remarks, it is solely in the hope that these may prove of general interest and that they may be useful to future students of this group of Birds.

Before, however, speaking of the scientific questions touched upon by Count Salvadori, I wish to point out that the lack of conciseness in parts of my work, justly noticed by the writer, is partly due to the translation, which, faithful enough as a whole, has been prepared by a non-ornithologist. In this no doubt lies the chief cause of some expressions not rendering clearly enough what I wished to say. It is true that I revised the English translation before sending it to press, and compared it with my Russian text as well as I could, but this proved too difficult a task for one not sufficiently master of the English language. Still the want of clearness in some parts of my book is solely due to myself, and I can now only say *mea culpa*!

I have given in my work all that I knew about the two alleged Grey-lags—the Western and Eastern—to prove that there is not a single constant character by which they can be separated. It may be that I have seen fewer Oriental Grey-lags than has the Count in the Collection of the British Museum, but I have doubtless examined more West-European, Russian, Caucasian, Central-Asiatic, and Siberian specimens of this bird than had the author when writing vol. xxvii. of the Brit. Mus. Cat. of Birds. It appears from this volume that Count Salvadori had for comparison few Western birds of this species, and only birds from Great Britain and two from Norway (one a chick), whilst his acquaintance with the Oriental specimens was mainly based on the study of Indian birds. I am therefore confident that if he had had before him the specimens examined by myself, with the addition of some examples from the Tian-Shan, where I personally observed and collected Grey-lags, he would have found it a great puzzle to draw a line between the European type and the alleged Oriental form *rubrirostris*.

Now that we positively know that the *red bill* of "*rubrirostris*" has been ascribed to the bird owing to an erroneous translation of Radde's German description; further, that the average size and weight of the Indian specimens do not surpass in any way the size and weight of the Western birds, and that in no single case has an Eastern Grey-lag so far been found to weigh as much as 13–16 pounds, as some birds have been known to do in Germany (*Naumann*); and, lastly, that some of the Western birds are just as heavily spotted on the under side as are some Indian examples (according to Hume), I really cannot see what other characters are at hand for keeping apart *Anser anser* and *A. rubrirostris.* If Count Salvadori would only point out a single sufficient character for so doing, I should be the first to acknowledge the Eastern form.

Count Salvadori does not consider the characters of *Melanonyx* But. of generic value, whereas I do.

This is too difficult a question for me to discuss at length here, and I shall only say a few words to explain the reason why I consider the genus well grounded. The absence in *Melanonyx* of the black markings on the breast and belly, as well as their presence in the species of the genus *Anser* (*sensu stricto*), shew us, most decidedly, that the birds of these genera have descended from two distinct and ancient ancestral types—types as distinct from one another as the ancestral type of *Eulabeia* was from them. In fact, the black bars on head of *Eulabeia indica* ought to be regarded as of great antiquity, and it is impossible to suppose for a moment that they have been acquired in comparatively recent times. For this reason these bars are proof, for me at least, of absolute generic rank, and are of the same importance as is the presence or the absence of the black markings on the under parts of *Anser* and *Melanonyx*. Why this is so I hope soon to be able to shew in a work that I am now writing, in which I shall treat of the differences between generic and specific characters. These differences are now often confounded by systematic zoologists, though I deny any specific importance to, let us say, the presence or absence of a white collar in the Pheasants &c.

We know that in the Catalogue of the Chenomorphæ Count Salvadori does not accord generic rank even to the genus *Eulabeia*, but that he does so to *Chen* and *Philacte*. The author, however, in giving the characteristics of *Chen*, omits the only one of absolute generic importance, as I consider it, viz. the black bands along the tomia, by which *Chen* is most decidedly to be separated from all the other genera of the subfamily *Anserinæ*. This character does not admit the keeping in this genus of *Chen rossi*, which must be regarded as the type of *Exanthemops*.

At all events, if *Eulabeia* is not to be separated from *Anser*, there is no plausible reason for maintaining *Chen* or *Philacte*! But such a classification would almost bring us back to a state of things when it was thought possible to call the Grey-lag *Anas anser*!

Of still greater interest to me are Count Salvadori's remarks on the two Geese killed near Venice and sent to him by Count Arrigoni degli Oddi, as they tend to shew that these specimens make the author doubt the specific distinction of *Melanonyx arvensis* and *M. segetum*. Thus we learn that these specimens have the bills intermediate in sculpture between those of the two species *as described and figured in my book*. The bills are, respectively, 63 and 57 mm. in length, and their nails are contained in total length of *culmina* "only four times." Further, says the Count: "These have the yellow part of the bill more extended on the sides towards the base, and have a narrow line of white feathers round the base of the bill."

All these characters taken together clearly shew that the Venetian birds are genuine young, of the first year, of *M. arvensis*:—

(1) Because in no single instance have I come across a white line of feathering round the base of the bill in the young (or old) *M. segetum*, though I have done so on several occasions in the young of the first year of *M. arvensis*; (2) because this character in the birds from Venice coincides with the extension towards the base of the bill of the yellow colour; (3) because in the young of *M. arvensis* (first year) the nail *normally* occupies *but one-fourth* part of the total length of the culmen, as stated on page 112 (third line from the bottom) of my book, which fact is *never* observed at any age in *M. segetum*; and (4) because I have handled a considerable number of freshly killed (as also skins) of young *M. arvensis* that agreed well with the details given by Count Salvadori of the birds from Venice. That freshly killed birds have been obtained by myself and friends out of gaggles of typical *M. arvensis*, and in a locality in Finland where, during a period of six years' shooting, we never saw a gaggle, nor even a single individual of *M. segetum*, is a positive fact, and that I have eagerly looked out for *M. segetum*, but have never yet obtained one in the flesh, is another fact. It is true

that the young *M. arvensis* had in some cases only a very narrow line of white feathers round the base of the bill, but I suppose that this was greatly due to the early season when our shooting used to take place (the end of September and beginning of October, old style), and that the same birds, two or three months later, would have this white line round the base of the bill more developed. Since my book was printed, I have had the opportunity of examining more specimens of young *M. arvensis,* some of which had, while some had not, this white feathering round the base of the bill.

That *M. sibiricus* may, after all, not be a race of *M. arvensis,* but a distinct species, I am ready to allow, although I do not see any serious reason for taking this view, and I have nothing to say against restoring to it the name *middendorffi* (although Severtzov has described his *middendorffi* after a typical *M. arvensis,* as proved by his collection), but I decidedly deny the possibility of *M. sibiricus* (= *middendorffi*) being a geographical variety of *M. segetum*! The entire form of the bill, all its proportions, the slenderness of the *maxillæ,* and even the number of teeth do not for one moment allow of such a possibility. If such a fact could be admitted, all that Naumann and I have written on the bills of *M. segetum* and *M. arvensis* would be completely upset, and there would not remain a single character by which *M. sibiricus* could be distinguished from *M. segetum serrirostris,* though the birds are quite distinct species, as anyone having a series of both of them before him for comparison would easily see, if he only would take the trouble to pay attention to what I have said in my book about them.

At first I found it no easy matter to ascertain these differences in the bills of the *Melanonyches,* but I can now tell almost exactly the number of teeth of any given specimen of Goose of this group after a very superficial examination of the bill, and I think that this fact does, after all, *prove something,* and that it cannot be explained by sheer guess-work. But I fully realise that for a naturalist who has not skins of the different *Melanonyches* before him for comparison it would be almost hopeless to decide the matter, and that no amount of reading of even the most minute descriptions would be of much help to him. If this were not so, the Geese would not have been such a puzzling group of birds for naturalists, and then, probably, I should never have undertaken the task of studying them.

I am, Sirs, yours &c.,
S. ALPHÉRAKY.

S. Petersburg,
November 1905.

Our foreign member, Professor Giacinto Martorelli, writes to Mr. Howard Saunders as follows:—

DEAR SIR,—I send you to-day the last-issued parts of my book 'Gli Uccelli d' Italia' (11, 12, 13), and at the same time I have the pleasure of announcing that our Museum now possesses a very fine specimen of the young of *Rhodostethia rosea* (perfectly typical) killed in the beginning of January last in the Sardinian Sea.

The bird was not alone but had a companion, which was not killed, though observed again on the succeeding day.

The specimen was sent to me in the flesh, and has been mounted with exact modelling, after my own method and under my supervision.

I have preserved the body in spirit for anatomical purposes. The stomach contained some remains of small fishes and marine invertebrates.

I send you this notice of a rare little Gull that you may judge whether it is worth recording in 'The Ibis.'

Most faithfully yours,
Prof. GIACINTO MARTORELLI.

Museo Civico di
Storia Naturale, Milano.
March 1906.

The Cruise of the 'Valhalla,' R.Y.S.—The following letter from Mr. M. J. Nicoll, dated "Off Tristan d'Acunha, Jan. 20th, 1906," and addressed to Sclater, was posted on the arrival of the 'Valhalla' at Cape Town:—

"We are lying off Tristan d'Acunha on account of the very strong wind, and have been doing so for the last three days. I think I wrote to you last from Las Palmas*. From there we went to St. Paul's Rocks, but were unable to land on account of the weather. We then proceeded to Bahia, where we were delayed for a fortnight. At Bahia some of us went to the Island of Haparica and camped out there twice for two nights. On both occasions I collected, and got about 150 birds, doubtless all of well-known species.

"We were terribly annoyed there by grass-ticks and mosquitoes, and since we left all of us who camped out, with the exception of myself, have had bad attacks of malaria. All the same it was a most delightful experience. A night spent in a Brazilian forest is a thing to be remembered. The different Nightjars and Owls were calling all night, and the cries of the awakening birds at dawn were delightful.

"From Bahia we sailed to South Trinidad Island, where we had excellent luck. The sea was smooth, and we landed on two days without any difficulty at all. I made a good collection, including several Sea-birds not known from there before and a large series of Petrels. Of the Petrels I met with only two species—*Œstrelata wilsoni* (both light and dark phases) and *Œ. trinitatis* (which is not nearly so common as the former). I entirely failed to find the so-called *Œ. armingiana,* although I looked most carefully for it. We had a very hard climb, but got to the top of the island, on which we found two sorts of trees, a low bush, several plants, and plenty of tree-ferns. There is no land-bird on the island, although there are several species of moths and bees, and we saw some mice. I was much surprised at the small size of the land-crabs; I had always heard that they were very large and ferocious, but we found them small and very timid. I took some good photographs of birds and views of the island. Nearly the whole of the island is covered with grass except at the top where the tree-ferns grow, but the ground is rotten, and it is very difficult to walk about on it.

"From Trinidad we sailed here. The first evening I had no time to go ashore, but several of the men from the island came on board, and I gathered from them that the Thrush

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* See letter above, p. 214.

(*Nesocichla eremita*) is the only land-bird found here now. None of them knew anything of the Rail of this island, though they had heard of its existence on Inaccessible Island. So I suspect that it has been extinct here for a long time. They tell me that a plague of rats, which came from a ship wrecked here, destroyed all the birds except the Thrush, which, although found here and very tame, is decidedly scarce. I went off in a boat to get some sea-birds for half an hour before dark, and obtained examples of *Thalassogeron chlororhynchus*, *Sterna vittata*, and a species of *Pelecanoides*.

"We are now waiting for the wind to drop, so that we can land. I have seen a few Birds flying round the ship, the most noticeable being *Puffinus gravis* in pairs. I shall post this letter at Cape Town."

A postscript states that after waiting three days in vain for the gale to cease, the 'Valhalla' was compelled to proceed to Cape Town, where she arrived on Jan. 28th.

Another letter from Mr. Nicoll, dated Cape Town, Feb. 6th, informs us that the explorers were leaving on the following day for Europa Island in the Mozambique Channel, which, as he was assured, had never been visited by a Naturalist.

Mr. Ridgway's Visit to Costa Rica.—With very great pleasure we learn that our much-esteemed friend and Honorary Member, Mr. Ridgway, has spent a winter in Costa Rica, and has thus enjoyed a delightful interlude in the laborious process of compiling his great work on the 'Birds of North and Middle America.' In the last number of 'The Condor' (vol. vii. no. 6), Mr. Ridgway has written a most interesting article on this charming excursion, which no Ornithologist should omit to read. Having accepted a cordial invitation from the well-known Naturalist Don José C. Zeledon, of San José, he started for Costa Rica, accompanied by Mrs. Ridgway, on November the 28th, 1904, and remained there until May the 28th of the following year, thus passing a period of nearly six months in a most splendid country. For particulars of some of his principal experiences in this attractive part of Central America we must ask our readers to refer to the traveller's 'Winter with the Birds in Costa Rica.' Suffice it to say that he traversed the country from ocean to ocean, and from the sea-level to the summit of Irazu (11,500 feet alt.), while he gives a most favourable account of it. Many rare birds, such as *Pteroglossus frantzi*, *Arinia boucardi*, *Microchera parvirostris*, *Carpodectes antoniæ*, and *Cephalopterus glabricollis*, were observed in their native wilds, and of most of them fine series were obtained. A nest of the wonderful Trogon *Pharomacrus mocinno* was found, and a fully fledged young bird was taken alive!

The Structure of the Ratitæ.—A very nicely prepared table-case, the work of Mr. W. P. Pycraft, F.Z.S., has been lately added to the Bird-Gallery of the Natural History Museum. It is designed to point out the most salient characters of the Order "Ratitæ" which distinguish them from the rest of the Class "Aves." The skull, the sternum, the shoulder-girdle, the pelvis, the sacrum, the feathers, and the wings of the various forms are illustrated by a series of carefully mounted specimens, which serve to shew their differences from all other birds and their distinctions *inter se*.

The inclusion of the Tinamous in the Ratite group will doubtless give rise to some criticism, but the structure of the palate and other characters seem to give much support to this position.

But besides its systematic purpose, this case may be regarded as forming a very valuable lesson in degeneration and in the evolution of flightless birds. Nowhere else, so far as we know, is there to be found a similar collection of preparations of the wings and sterna of the Ratitæ. Similarly prepared cases for the other Orders of Birds would be very useful, and we are sure that they would be much appreciated.

The Wild Swan of Seistan.—In the 'Journal of the Bombay Natural History Society' (vol. xvi. no. 4, 1905) will be found "A List of the Birds shot or seen in Seistan by

Members of the Seistan Arbitration Mission, 1903–05," prepared by Mr. J. W. Nicol Cuming. Amongst these is included the Whooper (*Cygnus musicus*), which is stated to be a "permanent resident" in Seistan on the Hamun, and to be "fairly numerous," many of the young being captured there. In answer to enquiries on this subject, Col. Sir Henry McMahon, the Commander of the Seistan Mission, has favoured us with the following information :—

"The specimen of the Whooper Swan (obtained on the 14th of January, 1905) was sent to the Indian Museum. We observed a great many Swans, all, so far as I could see, of this species, on the Seistan Hamun. I also saw several young birds, which had been bred on the Hamun. The Sayāds, a curious tribe of aborigines who make their livelihood by snaring ducks and fishes, pay their annual tribute to the Persian Government in the form of a fixed quantity of duck-feathers. This tribute used to include swan-feathers also, but of late the number of Swans in Seistan is said to have decreased. A number of young Swans are caught every year and sent by the Persian and Afghan Governors to Teheran, Herat, and Kandahar.

"The Hamun, with its vast expanse of open water (I have seen it in the flood-season over 100 miles long and from 5 to 15 miles wide), and with its wide expanse of thick and high reed-beds along the margin, with sheltered pools among the reeds, teems with all kinds of water-fowl during the winter, and many of them remain to breed there. The rest leave for the north in March and April, and return in September, October, and November."

There can be no doubt, we think, after what Sir Henry McMahon tells us, that a species of Wild Swan breeds habitually on the waters of Seistan. But it would seem unlikely to be the Whooper, which has been hitherto known to nest only in high northern latitudes, and has seldom been detected so far south as Seistan, even in winter. We would ask the authorities of the Indian Museum, who have received the specimen above spoken of, whether they are sure of its identification as *Cygnus musicus*, and we shall be glad if any of our Indian correspondents can supply us with further information on this interesting point.

The Victoria Histories of the Counties of England.—The attention of our readers should be once more drawn to the lists of Birds included in the volumes of this work now in course of publication. Since the issue of vol. i., in which Mr. Meade-Waldo wrote on the Birds of Hampshire, several other histories have been completed, while we have just received a copy of the article on the ornithology of Derbyshire by the Rev. F. C. R. Jourdain. This county has an especial claim to our notice from the fact that the northern and southern forms there overlap in many cases, and it is also interesting as possessing great diversity of character. The author gives us a list of the literature referring to the birds and a good account of their present position under Protection. In some cases the habits of the birds are given in rather greater detail than seems necessary for a county list, but this may well be overlooked in consideration of the equally full and valuable details which are given elsewhere. We are not astonished to learn that the Raven, Buzzard, and Kite have disappeared from the county, but agree with Mr. Jourdain that the decrease of the Wood-Lark and Pied Flycatcher is somewhat unaccountable. Many birds have increased in numbers, notably the Hawfinch, Great Crested Grebe, and Redshank. We may also draw attention to the case of a Redstart breeding in a Scotch fir-tree, and of the Chaffinch decorating its nest with scraps of paper, the latter of which reminds the present writer of a similar nest found in the county of Durham on the ground among flowering grass-stems.

The Curatorship of the Sarawak Museum.—We understand that Mr. J. Hewitt, of Jesus College, Oxford, has been appointed Curator of Rajah Brooke's Museum at Kuching, Sarawak, Borneo, in succession to Mr. Robert Shelford, who has come back to England and is now engaged on Entomological work at the University Museum, Oxford.

Corrections to Mr. Buturlin's article on the Rosy Gull.—Mr. Buturlin requests us to make the following corrections in his article on the Rosy Gull in our last number:—

P. 135.—The Tern here referred to is the Arctic Tern, *Sterna macrura* Naum.

P. 139.—The Skua here mentioned is not Buffon's Skua, but the Pomatorhine Skua, *Lestris pomatorhinus* (Temm.).

The New Ruwenzori Expedition.—In our last number (above p. 222) we gave some information respecting the new expedition for the further exploration of Ruwenzori, under the leadership of Mr. R. B. Woosnam, which left England in September last. We have now the pleasure of announcing that the party reached that famous mountain (*viâ* Mombasa, Entebbe, and Fort Portal) without incident, and at the end of December were safely encamped in the Mupuku Valley near a small hamlet called Bihunga, at an elevation of from 6000 to 7000 feet above the sea-level.

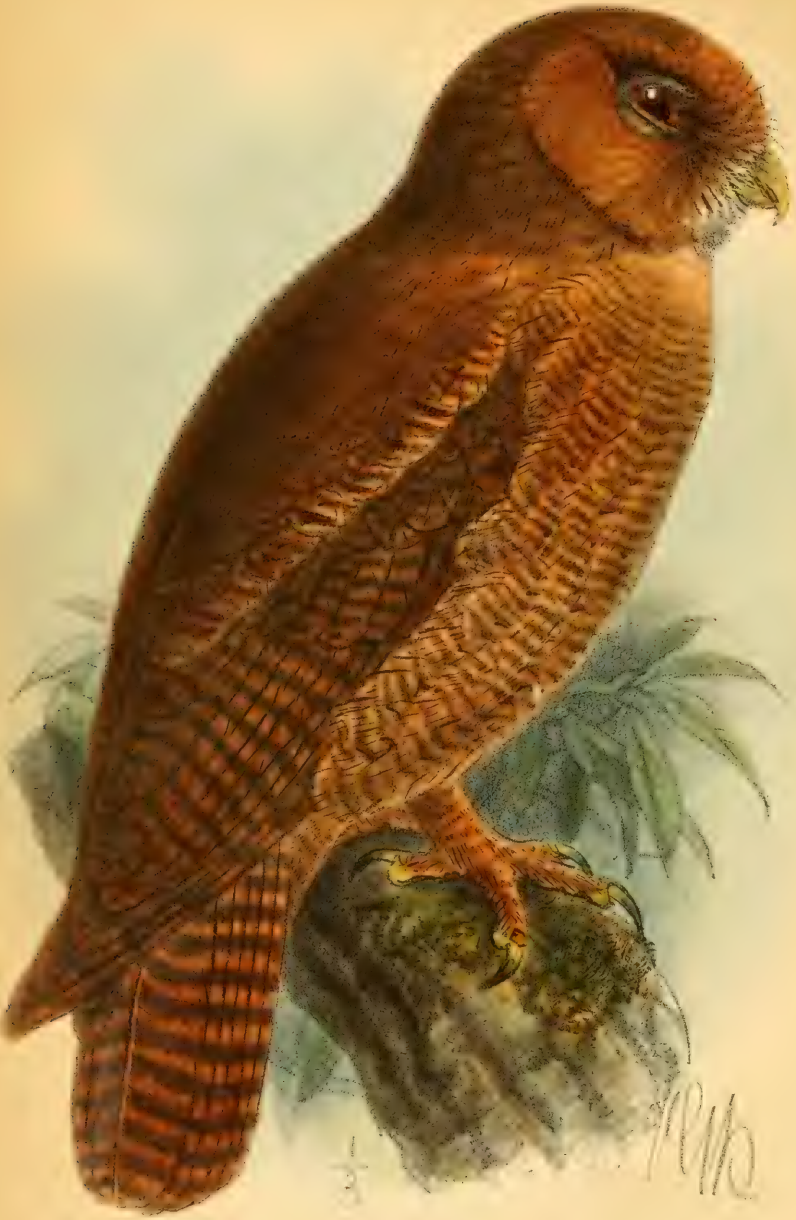
Mr. Woosnam, writing to Mr. Ogilvie-Grant, says:—

"I have not been into the forest yet, but it looks impenetrable. Below us are the undulating lower hills, appearing from a distance as if they were covered with nice short grass. But in reality they are jungles of Elephant-grass fifteen feet high, mixed with reeds and creepers."

Mr. Woosnam does not give a good account of the weather on Ruwenzori. "We left Fort Portal and came up here in pouring rain, and it has rained every day except one for the last eight days. Everything is a sea of mud and water."

In another letter (dated January 15th) Mr. Woosnam writes:—

"We are getting on better now, having put up a good workshop. We have already preserved about 400 birds and 82 mammals, besides a good many insects. The weather has cleared up, and we get a fair quantity of sunshine."



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SYRNIUM [illegible]

THE IBIS.

EIGHTH SERIES.

No. XXIII. JULY 1906.

XXV.—*On a new Owl from Java.*

By Dr. O. Finsch, H.M.B.O.U.

(Plate XVII.)

I have lately received for examination a specimen of a new Owl from Java, which I have named after its discoverer and now diagnose as follows :—

Syrnium bartelsi. (Plate XVII.)

Syrnium bartelsi Finsch, Bull. B. O. C. xvi. p. 63 (1906).

Adult female. Upper parts uniform dark chocolate-brown, crown somewhat darker ; longest upper tail-coverts with equidistant cross-bars of lighter brown ; wing-coverts dark brown (like the back), the greater coverts with indistinct lighter cross-bars, which become more marked on the coverts of the secondaries ; spurious wing uniform dark brown ; coverts of the primaries distinctly cross-barred with light brown (the light bars as wide as the dark) ; the first primary uniform blackish brown, the second shewing on the basal half of the inner web brown cross-bars, which are visible also on the outer web of the third and gradually become more distinct on the remaining primaries and still more so on the secondaries ; the longest primary (which is the 5th) crossed with about seventeen dark and as many light equidistant cross-bars ; longest shoulder-feathers rufous on the inner web, white on the outer, with narrow dark brown cross-bars running over both webs; this shoulder-patch is, however, nearly hidden by the smaller dark brown shoulder-feathers, so that only a narrow longitudinal stripe is visible; under wing-coverts rufous-buff with very narrow dark cross-bars; greater under wing-coverts dark brown, but rufous buff on the basal half with narrow dark cross-bars; primaries beneath dark brown, banded with rufous ochreous on the inner web, uniform ochreous towards the base, the same as the secondaries beneath, which, however, shew very narrow dark brown cross-bars; tail-feathers black, crossed with well-marked brown bars of nearly equal width, 18 in number on the central feathers and 16 or 17 on the outer; the latter being, on about two-thirds of the basal part of the inner web, light, nearly whitish, with dark cross-bars; facial disk (*i. e.*, face and sinciput) warm rufous buff, surrounded by a dark chocolate-brown ruff, which becomes very narrow and obsolete below the cheeks; eyes above broadly margined with black, the longer hair-like feathers covering the nostrils being also black; chin chocolate-brown, followed by a band of uniform rufous buff, which extends over the sides of the neck (where it is more vivid) to the dark brown hind-neck (on the latter some feathers shew indications of light cross-bars); below the uniform band across the throat the rest of the under surface of the body is rufous buff or ochreous, with narrow dark brown cross-bars, which become more marked on the vent and lower tail-coverts (the dark bars everywhere narrower than the light); legs and toes rufous ochreous, outside of legs with narrow dark cross-lines.—Bill whitish; nails blackish; irides dark brown.

Long. tot. 470, al. 360, caud. 200, tars. 60, dig. med. 45, ung. 25, culm. 35 mm.

I am pleased to be able to name this remarkable new Owl after my friend Mr. Max Bartels, of Pasir Datar, that zealous student of Javan ornithology, who was so fortunate as to shoot the unique specimen on November 3rd, 1902, on Mount Pangerango (2600 feet high), in Preanger, Western Java. It forms part of the noteworthy collection "Bartels und ter

Meulen" of Amsterdam, which is especially rich in Javan birds.

As already shown in my diagnosis, this new Owl has the toes feathered as in *S. seloputo* and *S. maingayi* from Malacca, but is distinguished at once from both these species by the uniform dark brown back, and by the great number (from 16 to 18) of the cross-bars on the tail-feathers (in *S. maingayi* there being only from 10 to 12). It is also somewhat similar to *S. leptogrammicum* from Borneo, but that species is smaller, has the back with light cross-bars, and belongs to the section with naked toes.

Mr. Bartels may be congratulated on this remarkable discovery, the more so as Strigine Birds are everywhere difficult to observe and to obtain, especially in tropical forests. As regards Java, this is shown by referring to the results obtained by three of its principal ornithological explorers during many years of residence. Horsfield * (1802 to 1819) obtained specimens of eight species of Owls, six of which he described as new to science. The well-known veteran ornithologist of Java, the late Dr. A. G. Vorderman (from 1877 to 1902), got examples of only four species of Owls, whereas his zealous young follower, Mr. Max Bartels, during the last ten years has obtained (this new species included) examples of eight species, but of most of them only a few specimens. In all our museums, however, Owls from Java are rare, and consequently there are many questions relating to them to be solved, to some of which I call attention in the subjoined list. In nomenclature I follow Dr. Sharpe's 'Hand-list of Birds.' I also refer to the recent publications of Vorderman † and Bartels ‡, but only for those species of which specimens were actually obtained. I may add that a MS. list of Kuhl (1820–21) mentions three Owls (*Ketupa ketupa, Huhua orientalis,* and *Scops lempiji,* all new at that time) as collected by him near Buitenzorg.

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* "Systematic Arrangement and Description of Birds from the Island of Java," Trans. Linn. Soc. London, vol. xiii. (1822).

† "Systematisch Overzicht der Vogels welke op Java inheemsch zijn door A. G. Vorderman, van aanteckeningen voorzien door Dr. O. Finsch," Natuurk. Tijdschr. v. Ned. Ind. lx. 1901, pp. 36–155.

‡ M. E. G. Bartels, "Zur Ornis Javas," *op. cit.* lxi. 1902, pp. 129–172. This list enumerates 239 species obtained by the author, who in a forthcoming paper (to be published in the Journ. f. Orn.) increases the number to 309 species.

LIST OF KNOWN JAVAN OWLS.

1. KETUPA CEYLONENSIS (Less.).

Ketupa ketupa (Horsf.); Sharpe, Hand-l. i. p. 281.

Ketupa ceylonensis (Less.) Sharpe, Cat. B. Brit. Mus. ii. 1875, p. 8; Vorderm. l. c. p. 48 (Batavia, Salak); Bartels, l. c. p. 131 (Preanger); id. Journ. f. Orn. 1903, p. 281.

Hab. Java, Borneo, Sumatra, Malay Peninsula to S. Tenasserim.

2. HUHUA ORIENTALIS (Horsf.).

Huhua orientalis (Horsf.); Sharpe, l. c. p. 284.

Bubo orientalis Sharpe, Cat. B. ii. p. 39; Bartels, l. c. p. 131 (Preanger).

The distribution of this species is the same as that of the last, but includes the Island of Banka.

Schlegel recognised the Javan bird as a distinct race (*Bubo orientalis minor*), and a careful comparison of specimens from various localities seems desirable in order to settle the question whether the Javan species (or subspecies) is peculiar to the island. If so, the species from Sumatra, Borneo, and the Malay Peninsula must be called *H. sumatrana* (Raffl.).

3. SCOPS LEMPIJI (Horsf.).

Scops lempiji (Horsf.); Sharpe, l. c. p. 287; id. Cat. B. ii. p. 91; Vorderm. l. c. p. 48 (Batavia, Salak); Bartels, l. c. p. 131 (Preanger); id. Journ. f. Orn. 1903, p. 283.

Hab. Java, Borneo, Sumatra, Banka, Malay Peninsula, and Indo-Chinese Provinces (*Sharpe*); also the Kangean Islands (Nov. Zool. 1902, p. 428).

This species has apparently not yet been divided subspecifically, although Gurney called attention to "a large form from Sumatra" ('Ibis,' 1879, p. 470). It is the most common of the Javan Owls, and was long ago described by

Friederich von Wurmb (" De kleine Hoornuil," Verhand. van het Bataviaasch Genootschap van Kunsten en Wetenschappen, iii. 1781, p. 376).

4. Scops rufescens (Horsf.).

Scops rufescens (Horsf.) ; Sharpe, l. c. p. 287 ; id. Cat. B. ii. p. 102 ; Vorderm. l. c. p. 49 (Sumatra).

According to Sharpe, the Malay Peninsula and the Greater Sunda Islands are the localities inhabited by this species. As regards Java it may be hoped that Horsfield's type is still preserved in the British Museum ; for his description is quite insufficient, and since his time only Schlegel has noticed a single specimen from " Java " (Revue, Noctuæ, p. 11. no. 4, 1873), without naming the collector. Specimens of undoubted origin are, therefore, required to settle this question.

5. Ninox scutulata (Raffl.).

Ninox scutulata (Raffl.) ; Sharpe, l. c. p. 290 ; id. Cat. B. ii. p. 156.

Ninox borneensis Gurney, Ibis, 1879, p. 470 (Java).

This widely distributed species, with its various forms, was first noticed from Java by Gurney, but his specimen was obtained from a dealer, without the exact locality. This example is referable to the subspecies *N. borneensis*, and agrees with a specimen from Labuan (cf. *N. labuanensis* Sharpe, Cat. B. ii. p. 165).

A careful comparison of Javan specimens, therefore, seems very desirable, but a whole series is necessary. Mr. Bartels informs me that he has as yet obtained only one example of *N. scutulata* at Preanger, as this Owl seems to visit Java merely as a migrant.

6. Syrnium seloputo (Horsf.).

Syrnium seloputo (Horsf.) ; Sharpe, l. c. p. 294.

Syrnium sinensis (Lath.) ; Sharpe, Cat. B. ii. p. 261 ; Vorderm. l. c. p. 49 (Batavia).

Dr. Hartert kindly informs me that Horsfield's type-specimen of this Owl is still in the British Museum, and seems to be identical with the bird generally called " *Syrnium* *sinense* (Lath.), from the "Greater Sunda Islands, Malay Peninsula, and Indo-Chinese Provinces." Specimens from Java are very rare in collections.

7. SYRNIUM BARTELSI, Finsch.

Java.

8. GLAUCIDIUM CASTANOPTERUM (Horsf.).

Glaucidium castanopterum (Horsf.); Sharpe, l. c. p. 299; id. Cat. B. ii. p. 216.

This is another very rare species, of which Mr. Bartels has as yet procured only one specimen. It is not peculiar to Java, being also found on Bali (*Doherty*; Hart. Nov. Zool. 1896, p. 552).

9. PHOTODILUS BADIUS (Horsf.).

Photodilus badius (Horsf.); Sharpe, l. c. p. 300.

Phodilus badius Sharpe, Cat. B. ii. p. 309.

Since Horsfield's time Mr. Bartels seems to be the only collector who has obtained this beautiful Owl in Java (a single specimen at Preanger, November, 1901). There is no example from that island in the Leyden Museum. It is a widely distributed species—Eastern Himalayas, Burmah, Assam, Pegu, Malay Peninsula, Sumatra, Java, Borneo; also on Nias and Bali (*Doherty*).

10. STRIX JAVANICA Gm.*

Strix javanica (Gm.); Sharpe, l. c. p. 300.

Strix flammea, pt., Sharpe, Cat. B. ii. p. 301.

"*Strix flammea, β. javanica* Gml."; Vorderm. l. c. p. 49 (Batavia); Bartels, l. c. p. 131 (Preanger).

Dr. Sharpe gives the geographical range of this Owl as follows:—Indian Peninsula, Indo-Chinese Provinces, Greater and Lesser Sunda Islands.

Dr. Hartert, noticing its occurrence on the Kangean Islands, says: "*S. flammea javanica* is very different from the North European *S. flammea flammea*. The nearest form to it is apparently the African *S. flammea maculata*, Brehm

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* Based on "De Nachtuil van Java," described by Friederich von Wurmb in Verh. Bat. Gen. v. Kunsten en Wetenschappen, iv. 1782, p. 253.

(from Khartoum)" (Nov. Zool. 1902, p. 428). *Strix flammea* from Kalao, a small island south of Celebes, will probably be referable to *S. flammea javanica* (Hartert, ib. 1896, p. 177). On the other hand, the same savant says of a specimen from Sumba, "this bird does not seem separable from *S. flammea typica*" (ib. 1896, p. 588), but soon afterwards it was given subspecific rank (*S. flammea sumbaensis* Hart. ib. 1897, p. 270). This is a good instance of the difficulty of determining the various subspecies or forms of Barn-Owls.

P.S.—Since I wrote this paper I have received the following additional note from Mr. Max Bartels:—

"The capture of this fine Owl I owe, singularly enough, wholly to some Drongos (*Dicrurus longus*). Observing some of these birds chasing an Owl, which I took at first for a Fishing-Owl (*Ketupa*), not uncommon hereabouts, the perseverance of their attacks induced me to follow them. Led by the loudly crying Drongos I easily found the Owl, hidden in the thick foliage of a tree, and shot it. At a glance I saw that it was of a species not yet obtained by me, undoubtedly new to Java, and perhaps also to science.

"The stomach contained only a few remains of large beetles."

XXVI.—*On the Birds collected in Transcaucasia by Mr. A. M. Kobylin.* By S. A. Buturlin.

During the past three years Mr. A. M. Kobylin has been accustomed to send to me for identification the bird-skins obtained by him in Transcaucasia, and he has now kindly given his consent to the publication of my notes concerning them. The collection was made partly in the western portion of Transcaucasia—near Kutais and in the Lower Rion Valley, and partly in the central portion of Transcaucasia—near Akhalzikh (Tifliz Government) and near Ssuram (Tifliz Gov., Gori Distr.). A list of birds from the last-named locality (Ssuram), containing some 54 specimens, has already been published by Mr. Kobylin in the Russian sporting periodical 'Psovaya e Rujeinaya Okhota' ('Hunting and Shooting') for 1905, pp. 137–144 and pp. 152–159, under the title of "Materials for an Avifauna of the Caucasus," together with his field-notes.

I now give a systematic list of the birds of Transcaucasia collected by Mr. Kobylin during the years 1903–1905. Others might doubtless have been added, but being a busy man he had not much time to spare. For shortness' sake only one list is given, but with three columns—

I. for Kutais (Rion Valley, Black Sea basin);
II. for Akhalzikh (Kura Valley, Caspian Sea basin);
III. for Ssuram (one of the side valleys of the Upper Kura).
n. signifies that the species observed was nesting;
h. „ wintering;
tr. „ on migration;
ae. „ in summer;
v. „ in spring;
au. „ in autumn;
s. „ sedentary;
m. „ abundant;
r. „ rare;
+ „ present (without further particulars);
( ) „ seen, but not skinned or even killed;
0 „ that the species was never observed;
* An asterisk prefixed denotes that the species is more fully dealt with further on in the paper.

	I.	II.	III.
1. Podicipes fluviatilis *Tunst.*	r. au.	0	0
2. Phalacrocorax carbo *L.*	+	0	0
3. Rallus aquaticus *L.*	h.	0	0
4. Crex crex *L.*	(ae.)	0	0
5. Gallinula chloropus *L.*	n.	0	0
6. Scolopax rusticola *L.*	m. h.	0	0
7. Gallinago gallinago *L.*	m. h.	0	au.
8. Limicola platyrhyncha *Temm.*	m. au.	0	0
9. Tringa minuta *Leisl.*	au.	0	au.
10. T. alpina *L.*	m. au.	0	0
11. T. subarquata *Güld.*	au.	0	0
12. Pavoncella pugnax *L.*	r. au.	0	0
13. Terekia cinerea *Güld.*	m. au.	0	0

	I.	II.	III.
14. Actitis hypoleucos *L.*	ae.	0	ae.
15. Totanus calidris *L.*	au.	0	0
16. T. glareola *L.*	0	0	ae.
17. T. ochropus *L.*	(v. au.)	0	m. au.
18. Numenius arquata *L.*	(au.)	0	0
19. N. phæopus *L.*	m. au.	0	0
20. Phalaropus lobatus *L.*	r. au.	0	0
21. Hæmatopus ostralegus *L.*	r. ae.	0	0
22. Strepsilas interpres *L.*	m. au.	0	0
23. Ægialitis dubia *Scop.*	n. m. tr.	0	ae. au.
24. Æ. hiaticula *L.*	m. au.	0	0
25. Vanellus vanellus *L.*	(m. v.)	0	0
26. Hydrochelidon nigra *L.*	au.	0	0
27. Sterna fluviatilis *Naum.*	(au.)	0	0
28. Turtur turtur *L.*	m. n.	0	m. n.
29. Columba œnas *L.*	(au.)	0	(m. au.)
30. C. palumbus *L.*	h.	0	0
31. Coturnix coturnix *L.*	n. m. tr.	0	m. n.
*32. Perdix perdix canescens, n. subsp.	0	+	0
33. Phasianus colchicus *L.*	m. s.	0	0
34. Fuligula ferina *L.*	h.	0	0
35. Nettion crecca *L.*	au.	0	0
36. Anas boschas *L.*	m. h.	0	0
37. Mergus albellus *L.*	h.	0	0
38. Ardea cinerea *L.*	(m. n.)	0	0
39. Ciconia alba *L.*	(ae.)	0	0
40. Pandion haliaetus *L.*	(au.)	0	0
41. Neophron percnopterus *L.*	0	0	(ae.)
42. Astur palumbarius *L.*	(n.)	0	(ae.)
43. Accipiter nisus *L.*	s.	0	m. n.
44. Buteo vulpinus menetriesi *Bogd.*	n. m. au.	0	0
45. Circaëtus gallicus *Gm.*	(m. au.)	0	0
46. Haliaëtus albicilla *L.*	(m. s.)	0	0
47. Falco subbuteo *L.*	r. au.	0	(r. au.)
48. Circus æruginosus *L.*	m. au.	0	(m. au.)
49. Scops scops *L.*	m. n.	0	0
50. Syrnium aluco *L.*	n.	0	0
51. Caprimulgus europæus *L.* (unwini *Hume*).	n.	0	n.
52. Cuculus canorus *L.*	m. n.	0	(m. n.)
53. Coracias garrulus *L.*	m. n.	0	(m. au.)
54. Merops apiaster *L.*	v. au.	0	m. au.
55. Alcedo ispida *L.*	(n.)	0	(r. ae.)
56. Upupa epops *L.*	v. au.	0	au.
*57. Cypselus apus *L.* (? var.)	m. n.	0	(m. n.)
58. C. melba *L.*	(n.)	0	0
59. Iynx torquilla *L.*	(m. n.)	0	0
*60. Gecinus viridis saundersi *Tacz.*	+	0	0
*61. Dendrocopus major tenuirostris, n. subsp.	m. n.	h.	(+)
*62. D. leuconotus lilfordi *Dress.* (? var.)	+	0	0
63. D. danfordi *Hargitt*	(+)	0	0
*64. Dendrocoptes medius caucasicus *Bianchi.*	+	0	0
65. Otocorys alpestris flava *Gm.*	au.	0	0

	I.	II.	III.
66. Otocorys penicillata *Gould*	h.	h.	0
67. Melanocorypha calandra *L.*	r. h.	h.	0
68. Lullula arborea *L.*	0	v.	0
69. Alauda arvensis *L.*	m. h.	h.	m. n.
70. Galerida cristata caucasica *Tacz.*	0	h.	au.
71. Calandrella brachydactyla *Leisl.*	m. au.	0	0
72. Merula merula *L.*	m. s.	h.	m. n.
73. Turdus pilaris *L.*	m. h.	0	0
74. T. musicus *L.*	h.	0	0
*75. Cinclus rufiventris *Hempr. et Ehr.*	0	h.	ae.
76. Saxicola morio *Ehr.*	r. au.	0	0
77. S. isabellina *Rüpp.*	m. au	0	0
*78. Pratincola maura *Pall.*	0	0	m. n.
79. P. hemprichi *Ehr.*	m. au.	0	0
80. Ruticilla mesoleuca *Hempr. et Ehr.*	0	0	ae.
81. Accentor modularis orientalis *Sharpe*	h.	0	0
82. Erithacus rubecula *L.* (*non* hyrcanus *Bl.*).	h.	0	0
83. Muscicapa parva *Bechst.*	0	0	au.
84. M. grisola *L.*	v.	0	au.
85. Phylloscopus rufus *Bechst*	0	0	ae.
86. P. nitidus *Blyth*	0	0	au.
87. P. trochilus *L.*	m. au.	0	0
88. Sylvia curruca *L.*	v.	0	0
89. S. atricapilla *L.*	m. n.	0	0
90. Lanius excubitor *L.*	h.	0	0
91. L. rapax *Brhm.* (europæus *Bogd.*)	0	h.	0
92. L. minor *Gm.*	v. au.	0	m. au.
*93. Enneoctonus collurio kobylini, n. subsp.	m. h.	0	m. n.
*94. Sitta europæa caucasica *Rchw.*	m. h.	0	0
*95. S. syriaca parva, n. subsp.	0	m.	0
*96. Cyanistes cæruleus *L.*	m. s.	+	n.
97. Parus major *L.*	m. s.	0	m. n.
*98. Acredula caudata major *Radde*	m. h.	+	0
99. Regulus cristatus *Koch*	0	+	0
*100. Certhia familiaris *L.*	(h.)	+	0
101. Tichodroma muraria *L.*	(au.)	0	0
102. Anorthura troglodytes *L.*	m. s.	0	+
103. Anthus trivialis *L.*	0	0	n.
104. A. cervinus *Pall.*	v.	0	0
105. A. pratensis *L.*	v.	0	0
106. Motacilla alba *L.*	m. s.	0	m. n.
107. M. melanope *Pall.*	m. h.	0	m. n.
108. Budytes flava *L.*	v. au.	0	0
109. B. flava borealis *Sund.*	v. au.	0	0
110. Chelidon urbica *L.*	m. n.	0	+
111. Hirundo rustica *L.*	m. n.	0	+
112. Cotile riparia *L.*	v. au.	0	0
113. Oriolus galbula *L.*	m. n.	0	0
114. Coccothraustes coccothraustes *L.*	h.	h.	0
115. Chloris chloris *L.*	m. s.	0	m. n.
*116. Pyrrhula pyrrhula rossikowi *Derj. et Bianchi*	h.	+	0

	I.	II.	III.
117. Fringilla cœlebs *L.*	m. s.	0	(n.)
118. F. montifringilla *L.*	0	h.	0
119. Passer domesticus *L.*	m. s.	0	m. n.
*120. P. montanus transcaucasicus, n. subsp.	r. v.	h.	m. n.
*121. Carduelis carduelis *L.*	m. h. v.	0	m. n.
122. Acanthis fringillirostris *Bp. et Schl.*	0	0	m. n.
123. Emberiza calandra *L.* (=miliaria *L.*)	n.	0	m. n.
124. E. citrinella erythrogenis *Brhm.*	h.	0	m. n.
*125. E. schœniclus *L.*, var.	h.	0	0
126. E. cia par *Hartert*	m. h.	h.	m. n.
127. E. hortulana *L.*	tr. au.	0	0
128. Sturnus purpurascens *Gould*	+	0	0
129. Sturnus sp. inc.	(n.)	0	(n.)
*130. Garrulus krynickii *Kalenicz*	m. s.	h.	m. n.
131. Pica pica *L.*	0	h.	0
132. P. pica borealis *Stejn.*	0	h.	0
133. Lycos monedula *L.*	(h.)	0	0
134. Corvus frugilegus *L.*	m. h.	0	0
135. C. cornix *L.*	+	h.	+
136. C. corax *L.* (? var.)	+	0	0
Number of species	117	24	54

To take an instance in explanation of this list. We must not suppose from "h." that *Emb. cia par* does not nest near Akhalzikh; I merely mean that it is represented in the collection from this locality by winter-specimens only.

Additional Notes on some of the Species.

32. *Perdix perdix canescens*, n. subsp.

I have compared two January specimens of this bird (♀ ♀, 15. i. 1905, "N. 278" and "N. 279" †) with my winter specimens of *P. perdix* L. from Southern Livonia and of *P. arenicola* (Buturlin, O. M. 1904, Sept., p. 148) from Turgai (Kirghiz Steppes). The Tifliz birds can be clearly distinguished from both; they have the chest as closely vermiculated with dark cross-lines as in typical *P. perdix* L. (not so sparsely as in *P. arenicola*), the "horseshoe," flank-bars, and lateral rectrices as rusty chestnut as in typical birds (just a shade darker, but not nearly so dark reddish, as Turgai birds), but the chestnut spots of the feathering of the upper side are almost lacking, just as in *P. arenicola*. Further, *P. canescens* differs from both the above-named forms in the much greyer (not so dirty-brownish) colouring of the upper parts, and especially of the lower back, rump, and upper tail-coverts, and in the light shaft-stripes on the nape and shoulders being whiter and broader. Of course this form is only a geographical subspecies of the Common Partridge. The bird is sedentary in Transcaucasia, nesting up to an altitude of 6000 feet. The wings of my specimens are 154–162 mm. long.

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† So numbered on Mr. Kobylin's labels.

57. *Cypselus apus* L.

The Kutais specimen is not paler than my Ssimbirsk birds, but the light spot on the throat is whiter and larger; I cannot, however, say whether this difference is local or purely individual.

60. *Gecinus viridis saundersi* Taczan.

As regards the female from Kutais, I can see no difference in colour from Livonian and Ssimbirsk birds, but it is smaller, with a slenderer bill (as are all recorded Caucasian specimens).

Dimensions in millim. for several females are:—

	G. viridis.		*G. saundersi.*	
Wing	170–173	from Middle Russia.	160	from Kutais.
Tail	98–100	„	94	„
Culmen	43–44	„	40·5	„
Depth of bill at the gonys	8–8·2	„	7·8	„

61. *Dendrocopus major tenuirostris*, n. subsp.

I have compared three specimens* from Transcaucasia (Kutais, "N. 82," ♀, and another without a number, 31 Jan. 1904; Akhalzikh, "N. 250," ♂, 11 Dec., 1904) with a score of Ssimbirsk specimens and several others from Esthonia, Livonia, Germany, and Rumania. The colouring of my birds shews no approach to *D. poelzami* Bogd.: the under parts are somewhat paler than in German specimens (as was long ago stated by Radde, Orn. Cauc. p. 243, Russ. ed.), just like my one Rumanian and my Russian specimens. Transcaucasian birds are smaller—the wing is 131–132 mm. long, while all my Russian and European birds have it 140–150 mm. long, or shorter only in young birds, but never less than 133 mm. (5·23 inches); the bill is somewhat longer and conspicuously slenderer (culm. 23–29 mm. long and depth 8–8·2 mm. at the nostrils) than in Russian and European birds (these last have culm. 21–26 mm. and depth of the bill 8·3–8·6 mm.). Of course this is only a subspecies of *D. major*, named *tenuirostris* from its slender bill.

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* Two more specimens have since been received.

62. *Dendrocopus leuconotus lilfordi* Dress.

I have no typical *D. lilfordi* to compare with my Kutais specimen. It differs from my Central-Russian and West-Russian specimens of *D. leuconotus* in having the back more barred, the sides of body much more heavily streaked, the under wing-coverts streaked with dark brown, and the dark bars on the tail-feathers broader: so I label it *D. lilfordi*. But the crown is certainly not crimson (as in *D. lilfordi* according to Mr. Dresser), but just as scarlet as in my Russian *D. leuconotus*. Perhaps this is a local race, somewhat different from *D. lilfordi*.

64. *Dendrocoptes medius caucasicus* Bianchi.

Dr. Bianchi based this form ('Annuaire du Mus. Z. de l'Ac. Sc. St. Pétersb.' 1894, vol. ix., in Russ.) on six specimens from the North Caucasus, while all the North-Caucasian specimens of Mr. Lorenz evidently belong to it also (see Lorenz, Beitr. etc. 1887, p. 44, "sehr lebhaftes gelb an der Unterseite"). Hitherto it has not been recorded from Transcaucasia, as modern writers (Menzbier and others) repeat Radde's statement that both typical *D. medius* L., and *D. sancti-johannis* Blanf. are met with there. As regards *D. medius*, I think that this is quite improbable, but Mr. Kobylin *thinks* that he has seen a skin of the true *D. sancti-johannis* there. All the specimens, however, in his own collection (♂ ♀ and juv.) belong to *D. caucasicus*.

This bird can be distinguished from its two conspecies even without actual comparison:—

I. On the terminal half of the two external pairs of rectrices white prevails; the third pair with a white (though sometimes dirty) apical spot; the tibial feathers with white prevailing.
  a. Lower breast sulphur- or fulvous-yellow, lightly streaked on the sides; abdomen crimson-red . . *medius.*
  b. Lower breast golden-yellow, heavily streaked on sides; abdomen scarlet .... *caucasicus.*
II. Terminal parts of the two external pairs of rectrices with black prevailing; third pair entirely black; tibial feathers with black prevailing; abdomen scarlet, lower breast golden-yellow, heavily streaked on the sides .... *sancti-johannis.*

The wings of my adult *D. caucasicus* are 121–123 mm. (about 4·8 inches) long, the culmen is about 20 mm. (0·8 inch).

75. *Cinclus rufiventris* Hempr. et Ehr.

The erroneous identification of the Caucasian Dipper with *C. cashmeriensis* Gould, committed by Seebohm, has since been repeated by M. Menzbier and other writers on Caucasian ornithology. Only Dr. Bianchi and Mr. Derjugin (K. M. Derjugin, "Materials for an Avifauna of the Chorokh District —South-western Transcaucasia—and of the Neighbourhood of Trebizond," in Ann. Mus. Zool. Ac. Sc. St. Pét. vol. v. 1900, p. 43, in Russ.) have pointed out that the Caucasian Dipper has nothing at all to do with *C. cashmeriensis,* in which the belly and lower breast are uniformly dark brown, while in Caucasian birds this dark brown colour becomes decidedly more rufous near its junction with the white colouring of the upper breast and chest. Evidently the Caucasian birds are much nearer to the European White-chested Dippers, but differ (as Dr. Bianchi points out) from *C. albicollis* Vieill. in the darker brown belly, from *C. cinclus* L. in the absence of black on the middle of it, and from *C. aquaticus* Bechst. in the brighter rufous at the junction of the dark and white parts of the breast.

Thus Caucasian birds must either be identical with *C. rufiventris* Hempr. et Ehr., or belong to a somewhat different local form. Herr Madarász (Ann. Mus. Nat. Hung. i. 1903, p. 559) has named a Dipper from the Caucasus "*C. caucasicus*," but his description is poor and misleading; he had several specimens, adult and young, of the same Caucasian Dipper, of which he named adult (typical) specimens "*C. cashmeriensis*" and described the young as new "*C. caucasicus*," pointing to the features of immature dress as specific differences. Till the Caucasian birds have been carefully compared with Palestine specimens (there are none in the St. Petersb. Museum) I consider it better to leave them under the name *C. rufiventris*.

78. *Pratincola maura* Pall.

In his work on the Birds of European Russia and the Caucasus * M. Menzbier states that *Pratincola maura* Pall. "probably" visits the Caucasus on migration, "but in any case only near the shores of the Caspian Sea." "Probably" is not quite a happy expression, as already (in 1884) Dr. Radde had described this bird clearly (Orn. Cauc. p. 207, Russ. ed., specimens 1 and 2, naming *P. rubicola* L., typ.). But the nesting of *P. maura* here has been proved only by Mr. Kobylin. He states that this bird is a typical inhabitant of the bush-covered slopes of the "Little Caucasus" (Mt. Nakala, 4000 f. h.), and also of the country near Ssuram (2400 f. h.) and v. Gertvis-ubano. He has sent me several specimens, procured in the latter half of July. Adult males have white unspotted upper tail-coverts, no white at the base of the tail-feathers, and blackish-brown under wing-coverts quite narrowly edged with whitish; the axillaries have blackish-brown bases and inner webs, and white outer webs and ends. The dimensions are as follows (in millim.) :—

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* M. A. Menzbier, 'Birds of Russia,' ii. 1905, pp. 1013 and 1015. I am bound constantly to mention M. Menzbier's compilation, not on account of its intrinsic value (it is confessedly only a popular work, too closely—I should add—following Seebohm's 'Hist. Br. B.'), but because it is the first (and as yet the last) more or less complete account of the distribution of Birds in European Russia and the Caucasus.

	♂.	♂.	♀.	Juv.
Wing	67	63	63	63
Tail	47	45	41	43
Tarsus	21·5	21·5	22·5	21·5
Gape of bill	16	16	16·2	15·5
Culmen	11	13 (inj.)	12	10·5
Bill from nostrils	8·9	8·8	8·8	8
Its height at base	3·7	4·4	4·1	3·8
Its breadth	4·5	5	5	4·5
First primary longer than coverts	9	6	9	9

Wing formula—4=3 just > 5 > 6 > 2 nearly=7 > 8.

93. *Enneoctonus collurio kobylini*, n. subsp.

My four males* from Kutais and one from Ssuram all differ to some extent from a dozen specimens of Central-Russian *E. collurio* L. The chestnut area of the back is somewhat reduced above and below, giving more room for the grey colouring of the neck and rump. The colour of this chestnut area is also rather duller in Caucasian birds, with a brownish tinge (not so bright rusty-shaded as in Central-Russian birds), and is conspicuously suffused with greyish, such as I have never seen in typical *E. collurio*. The under parts of the body are a trifle paler in the Caucasian form. One old male ("N. 131" of Kobylin's Coll., 25 May, Kutais) has all the back grey, only slightly tinged with chestnut on the mantle. In size I see no difference.

Radde (*l.c.* p. 222, Russ. ed.) points out the same differences between his twenty-five Caucasian specimens on the one hand and several German and Swedish on the other. Th. Lorenz (*op. cit.* p. 40) also writes that in his male specimens from the Northern Caucasus "rothbraun des Rückens siet nicht so weit nach unten erstreckt und ist die Farbe bei den Kaukasiern voller" than in British specimens of *E. collurio* L. So I am bound to conclude that the differences are not individual, but shew geographical variation, and I name this slight variety after Mr. Kobylin — who collected the specimens recorded—*Enneoctonus kobylini*.

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* Seven more specimens have since been received.

94. *Sitta europæa caucasica* Rchw.

This form was described by Dr. Reichenow in 1901 (O. M. 1901, p. 53) from the Northern Caucasus, but some half-a-dozen Transcaucasian skins agree closely with it. They are of the type of *S. europæa* L., but the under surface is light rusty, more intense than in *S. cæsia* Wolf, while even the cheeks and the throat are clearly tinged with rufous (they are white in *S. europæa* and *S. cæsia*) and the upper chin alone is whitish. Bill much shorter than in the forms just named, only some 15–16 mm. from the frontal feathers. On the forehead I can see no white.

95. *Sitta syriaca parva*, n. subsp.

Four winter specimens * from Akhalzikh, sex not ascertained. Wing 75–80 mm. (75, 77, 79, 80: mean 77¾ mm., or 3·05 inches); tail 46–49 mm.; tarsus 20–22 mm.; culmen 16·5–19 mm., its depth at base 4·5–4·8 mm. Upper surface bluish ashy grey, somewhat paler and greyer than in *S. cæsia* and *S. europæa*, but darker than in *S. rupicola* Blanf., as represented on tab. xv. of his work ('East. Pers.'), without white or black on the forehead. From the nostrils through the eye and down the neck to the back runs a black stripe, much longer than in the last-named figure, and much better defined and wider in front of the eye—as long and wide, in fact, as in my *S. europæa* L. from Ssimbirsk and Livonia. Chin, throat, chest, and cheeks with the ear-coverts pure white, gradually becoming dull pale rufous on the lower breast, flanks, and belly. Axillaries pale greyish; under tail-coverts pale grey, indistinctly edged with pale rufous. Primaries brown, edged with whitish at the basal parts of the inner webs; secondaries plumbeous-grey, somewhat tinged with brownish. First primary long and broad: 4½ mm. wide and 23–27 mm. long (measured below from base); second about equal to secondaries. Tail plumbeous grey, quite uniformly coloured from base to tip, only somewhat more bluish on the central rectrices, and a trifle more brownish on the inner webs. In general coloration, and especially in the fact that the rectrices lack all traces of white (as in *S. europæa* and its subspecies) and rufous (as in *S. neumayeri* Michah. and *S. tephronota* Sharpe) spots or bars, Transcaucasian birds are very near to *S. syriaca* Temm. et Ehr., from which they differ in having no traces of rufous edges on the upper wing-coverts, in the grey and not rufous under tail-coverts, and in the much smaller size (see the table, p. 419) *.

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* Two more specimens have since been received.

What *S. rupicola* Blanf. really is I cannot say, as the figure and description are not sufficient to determine it. The author writes "*S. syriacæ*, Ehr., similis," but (*op. cit.* pp. 223–224) he unites *S. neumayeri* and *S. tephronota* with rufous-spotted, and *S. syriaca* with uniformly coloured tail. Mr. Sarudny ("Birds of East Persia," in Mem. Soc. Im. Russ. Geogr. vol. xxxvi. 1903, p. 345, in Russ.) takes *Sitta rupicola* for a synonym of *S. neumayeri*, and Mr. Hellmayr ('Tierreich,' 18 Lief. 1903, p. 175) for *S. tephronota*; but this last view cannot be admitted, as Blanford expressly states that his bird has the black lore-stripe not well-developed, the throat and breast white, and the under tail-coverts rufous, and figures it accordingly.

In any case my *S. parva* differs from *S. rupicola* Blanf. not only in the somewhat darker upper parts and better-developed lore-stripe, but also in the grey under tail-coverts and in the proportions—the much less slender bill and legs.

For ease of comparison I add a table of dimensions in inches of typical *S. syriaca*, of a good series of the so-called *S. syriaca* from Persia after Sarudny and Blanford, of *S. parva*, and of *S. rupicola* after Blanford. The tail-dimensions I omit, as they vary according to the mode of calculating them:—

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* *Sitta* canescenti-cinerea, parva (ala $3\frac{1}{4}$ poll. non attingit), brevirostris (culmen $\frac{3}{4}$ poll. non attingit); striga nigra transoculari longa; auricularibus, gula, jugulo albis, ventre pallido-rufescente, subcaudalibus cinerascentibus, rectricibus immaculatis griseis; tectricibus alarum rufescente haud marginatis. *Hab.* Transcaucasia.

	syriaca typ.	*syriaca* of Persia *.	*rupicola.*	*parva*, n. sp.
Wing	3·74–3·80	3·40–3·74	2·90–3·15	2·95–3·15
Culmen	....	0·95 1·03	0·79–0·85	0·65–0·74
Tarsus	....	1·05–1·16	0·85–0·92	0·78–0·86

It seems to me that *S. parva* can be always distinguished from its congeners without actually comparing the skins; and if it stands in my list as only subspecifically distinct from *S. syriaca* this is merely because I had no more than four specimens of it for comparison *.

Hitherto no *Sitta* with plainly coloured tail-feathers (that is, unspotted with white or rufous on the lateral rectrices) has been recorded from the Caucasus—or, indeed, from within the limits of the Russian Empire.

96. *Cyanistes cæruleus* (L.).

I cannot find any difference between my Transcaucasian specimens and those from Germany: both differ from Ssimbirsk birds in having somewhat less white on the belly, in the darker blue crown, the considerably darker blue wings with narrower whitish transverse band, and the darker greyish-green back not so much suffused with yellowish. My Lenkoran (Talysh) skin is as pale yellowish in its back-coloration as are all Ssimbirsk (Middle Wolga) birds, and has as wide a wing-bar; still it is much paler and duller on the crown and wings.

This Lenkoran bird must be very near to *C. persicus* Blanf. (I have no Persian specimens, and Mr. Blanford's figure—East. Pers. ii. t. xvi. f. 2—with its leaden-grey crown and wings does not accord with his description "dull verditer-blue" and "dull blue," *op. cit.* p. 230), and the form from Eastern Russia (Orenburg-Ssimbirsk) is rightly regarded by Messrs. Sarudny and Loudon as a separate subspecies (*C. cæruleus orientalis* Sar. et Loud. Orn. Mon. 1905, p. 105).

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* Is this *S. syriaca obscura* of Sarudny and Loudon (Orn. Mon. 1905, p. 76) from Persia, said to be darker than *S. syriaca* typ., just like *S. neumayeri* Michah.? The description given is evidently merely preliminary.

98. *Acredula caudata major* Radde.

Radde's description and figure (Orn. Cauc. 1884, p. 112, Russ. ed. pl. vi. fig. 1) are not very clear, though, of course, referable to no other form. Mr. Lorenz's description, which is much better, differs in two points from all the specimens that I have received from Mr. Kobylin. Lorenz says (Beitr. Kentn. Orn. F. Kauk. 1887, p. 60): "superciliaries light greyish brown; back grey, paler on the mantle." My birds have light rufous-brown superciliaries and the back becomes slaty blackish near the base of the neck.

100. *Certhia familiaris* L.

As in the case of the *Cyanistes*, Transcaucasian Creepers (I have only one winter bird from the Akhalzikh District) seem to be much nearer to the typical form than to the East-European variety; my bird differs from the Ssimbirsk specimens of *C. scandulaca* Pall. in being duller and less rufous above, and in having the whitish spots (especially on the head) shorter and narrower. From *C. harterti* Hellm. and *C. persica* (Sarud. et Loud. Orn. Mon. 1905, p. 106) it further differs in having no rufous on the tail or underneath.

116. *Pyrrhula pyrrhula rossikowi* Derj. et Bianchi.

Radde states (*op. cit.* 1884, p. 141) that out of twenty-nine specimens of Transcaucasian *Pyrrhula* in his collection only seven winter individuals belong to the south-western form "*P. minor* Schleg." or are intermediate, twenty-two others being of the larger variety. Radde judged exclusively from dimensions, but the dimensions he gives for these presumed "*P. minor*" (wing of ♂♂ 88, 89, 88, and 88 mm., of ♀♀ 88, 85, 90 mm.) fairly exceed the average dimensions of the western form, so that not only 75 per cent. of his birds, but all of them evidently belong to the north-eastern form (or at least are nearer to it).

Lorenz has determined (*op. cit.* 1887, p. 15) his eight North-Caucasian winter skins (from Kislovodsk), with the aid of M. Menzbier, as western "*P. vulgaris* Bechst.," from their being smaller than "*P. coccinea*" of Moskwa and East Siberia (dimensions not given), and from their having a less-developed black cap and reddish tips to the lesser wing-coverts. In contradiction to his identification, Lorenz points out that Caucasian males "are conspicuous by the exceedingly bright red colouring of their under parts, such as is never seen in *P. coccinea*."

M. Menzbier, who evidently led Mr. Lorenz astray, informs us (*l. c.* 1895, ii. p. 592) that north-eastern "*P. coccinea* De Sel." does not visit the Caucasus even in winter, that "*P. vulgaris* Temm." is widely distributed there, as might be well expected, because this bird belongs to West, Central, and Southern Europe, North-west Africa, and Asia Minor; M. Menzbier adds that he has himself seen from the Caucasus only "*P. vulgaris* Temm.," and tries to ridicule Radde's statements to the contrary.

When Mr. Derjugin published (Ann. Mus. Zool. Ac. Sc. St. Pét. vol. v. 1900, p. 43, Russ.) the results of his excursion to the Chorokh basin (South-western Transcaucasia), he named his specimens "*Pyrrhula pyrrhula rossikowi* Bianchi," giving no description, but mentioning that his specimens of this Bullfinch, as all others from the Caucasus and Transcaucasia, had been identified by Dr. Bianchi as belonging to a new subspecies; that Dr. Bianchi had already thought of naming this subspecies *P. pyrrhula rossikowi*, and would shortly publish a full description of it. Mr. Derjugin added that he had satisfied himself that the Caucasian Bullfinch, contrary to Menzbier's assertion, in no way resembled western *P. europæa* Vieill., but was very near to the eastern *P. pyrrhula*, "the chief points of difference being the bright brick-red colouring of the under parts, and the dimensions of the black cap and bill" *.

As neither Bianchi nor anyone else ever published a description of the Caucasian Bullfinch, I will add some notes. I have compared five males and three females from Kutais and Akhalzikh (January) with seven males and four females from Ssimbirsk (March, October, and November) and two males from Livonia (January).

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* Thus "*P. p. rossikowi*" of Derjugin and Bianchi cannot be considered as a nomen nudum. The bright red of North-Caucasian birds had already been noticed by Mr. Lorenz (*l. c.*).

I give their dimensions in millim. :—

								Nostrils		
	Locality.	Sex.	Wing.	Tail.	Tarsus.	Culmen.	Gonys.	length from.	height at.	breadth at.
P. rossikowi.	Transcaucasia ..	♂	95	68	18	11·1	7	9·3	10·1	9·5
	" ..	♂	91	65	18	11·2	7·5	9·5	10·6	10·5
	" ..	♂	91	67	18·7		injured.			
	" ..	♂	91	65	17·3	9·5	7	8·5	9·5	9·4
	" ..	♂	90	67	17	10	6·8	9·2	10	8·9
	" ..	♀	91							
	" ..	♀	88·5							
P. pyrrhula.	Ssimbirsk	♂	92	67	17·5	9·3	7	8·2	9·6	8·8
	"	♂	92·5	68	18	10	7·1	9	10	9
	"	♂	91·5	67	18·4	8·5	6·3	7·7	8·6	8·8
	"	♂	91	66	18	9·3	6 9	8	8 9	8·9
	"	♂	91	69	17	8·9	6·2	7·8	8·7	9
	"	♂	89·5	64	18	9·5	6·7	8·5	8·7	8·8
	"	♂	90·5	66	18	9·3	6·8	8·6	9·2	8·7
	"	♀	89							
	"	♀	90							
	"	♀	89							
	"	♀	88·5							
	Livonia	♂	95	65	18	10·5	7·4	9	9·8	9
	"	♂	92	66	17·6	10·2	6·5	8·6	8·9	8·3

Evidently *P. rossikowi* is not smaller than typical *P. pyrrhula*, and it has a larger bill, somewhat differently shaped, being more swollen in its basal half and more suddenly compressed near the point; this difference is not striking, yet evident in a series. In both forms the first primary is usually nearly equal to the fifth or only a little longer. The black cap in *P. rossikowi* is—if anything—somewhat larger than in typical *P. pyrrhula*, *i. e.* somewhat more prolonged on the nape and hind-neck * (so far as can be ascertained from stuffed skins), and seems to be even less rounded behind. In males the red colouring of the under parts is somewhat brighter * and of a brick-red shade in *P. rossikowi*: it is a little paler and duller and more roseate or crimson-coloured in *P. pyrrhula*. The white rump-band in *P. rossikowi* is somewhat narrower, 22–26 mm. wide (23–27 mm. in

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* In *P. europæa* (=*minor* of Radde), on the contrary, the cap is shorter and the red of the under parts duller than in *P. pyrrhula*.

P. pyrrhula). The under parts of the female in *P. rossikowi* are also somewhat darker and more greyish or earthy brown, and in typical *P. pyrrhula* lighter and more sandy, or burned-wood brown. All these differences are clearly only subspecific.

This bird nests in the forests of the Akhalzikh District from 4000 feet upwards.

120. *Passer montanus transcaucasicus*, n. subsp.

All my Transcaucasian specimens differ from Middle-Russian *Passer montanus* in having the belly conspicuously whiter. They are also, as Dr. Radde has already pointed out (*op. cit.* p. 147), somewhat smaller, but the difference is trifling. My specimens measure in millim. (all adult winter specimens):—

Locality.	Wing.	Tail.	Culmen.	
Akhalzikh	66·5	50	10·3	*P. m. transcaucasicus.*
,, ...	69·5	51·5	11	
,, ...	71	52	9	
Ssimbirsk	69	53	9·3	*P. montanus typicus.*
,, ...	71	52	10	
,, ...	71	52·5	11	

The belly of *P. m. trancaucasicus* is so much whiter that every specimen can be easily determined by comparison. I can see no other differences.

121. *Carduelis carduelis* L.

I have examined five specimens from Transcaucasia (Tifliz, January; Kutais, February, March, May; Ssuram, June), not sexed, five males and four females from Ssimbirsk, and a score of specimens (in the Museum of C. Harald Loudon) from N. Turkestan, the Transcaspian Region, Orenburg, Pskow, Livonia, Rumania, Germany, England, and Tunis. Transcaucasian birds must belong to the form *C. elegans brevirostris* of Sarudny (Bull. Soc. Imp. Nat. Mosc. 1889, p. 133), who described the bird from Baku (western shore of the Caspian Sea) as being smaller (wing 70–78 mm.) than typical *C. carduelis*, with light brownish grey back, earthy grey spot on the sides of the breast, strongly brownish-stained cheeks, and a much reduced white nape-spot.

All that this talented explorer says is quite correct, if we take as typical *C. carduelis* the Goldfinch of Eastern Russia, where Mr. Sarudny did splendid work. And even then the colour-differences of the back, cheeks, and under side, being far from strong, are quite trifling *. But I must confess that I cannot separate my Caucasian Goldfinches from specimens of Western and Central Europe: their back is perhaps a shade duller and the yellow mirror paler, but the difference is so slight that a larger series must be examined before definite conclusions can be reached. The dimensions of the Caucasian birds are: wing 76–82 mm., culm. 11·3–11·8 mm.

The Goldfinches from Central and Eastern Russia (from Ssuram to the Ural) deserve separation. They differ from typical examples in the purer white of the cheeks, the greater amount of white on the nape and rump, the larger yellow wing-mirror, but chiefly in their larger size and stronger bill. I give some dimensions (in millim.) of my Ssimbirsk specimens (spring and autumn):—

C. volgensis.	Sex	♂	♂	♂	♂	♂	♀	♀	♀	♀
	Wing	85·5	84	83	83	82·5	82	81	80	78·3
	Culmen	13·3	13·8	13·7	13·7	13·5	12·5	12	12	12·5

This large East-Russian form, which I propose to name *C. carduelis volgensis*, cannot be confounded with the Kirghiz Goldfinch: *C. major* Tacz. is not only larger still (wing ordinarily not under 85 mm. in the male), but its pure white rump *and lower back*, sharply contrasting with the upper back, is so characteristic that anyone can identify it without comparison, if once acquainted with the bird.

125. *Emberiza schœniclus* L.

Having no material for comparison, I cannot decide to what form of *E. schœniclus* my Transcaucasian and Ssimbirsk specimens (they are very much alike) are referable. Their bill is 8·5–9 mm. long, measured from the frontal feathering, and 5·3–5·5 mm. high at the nostrils; in form it is very like the figure of *E. s. canneti* in Mr. Hartert's most useful work (Vög. paläark. F. p. 197, fig. 39).

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* To me it seems, for instance, that the dark spots on the sides of the breast are even of a somewhat more intense brown in Caucasian than in East-Russian birds.

130. *Garrulus krynickii* Kalenicz.

All the Jays collected by Mr. Kobylin near Kutais, Ssuram, and Akhalzikh belong to this form, which is very common in the Caucasus (its typical locality) and in Transcaucasia (except the south-easternmost and south-westernmost parts, both somewhat peculiar in their faunas). *G. krynickii* has also been recorded from the Crimea, the Balkan Peninsula, and the western shores of Asia Minor *. Are these Balkan and Smyrna birds really identical with those from Caucasia? I cannot say, having seen no specimens; the former are described (in Dresser's magnificent work, iv. p. 485; id. 'Manual,' p. 414) as having the nape and back grey. In all my Transcaucasian specimens the back is (though faintly) suffused with vinous, and the nape and hind-neck are darker *dull vinous*, slightly tinged with grey.

In the south-eastern part of Transcaucasia, the Talysh lowlands, *G. caspius* is met with. In the south-western part, the Chorokh basin and the neighbouring country, a Jay abounds that was at once recognised as new to the Russian avifauna by Mr. Derjugin, who visited that country in the summer of 1898 (Ann. Mus. Zool. Ac. Sc. St. P. v. 1900, p. 43 †). Mr. Derjugin identified this Jay as "*G. melanocephalus*, var. *anatoliæ* Seeb." (and the Caucasian Jay as *G. atricapillus* Geoffr.). In this I consider him to be wrong. *G. anatoliæ* of Seebohm is plainly only a synonym of *G. krynickii*. At any rate, Seebohm neglected the old description of the Caucasian Jay by Prof. Kaleniczenko, while, wrongly confounding ‡ Turkish and Caucasian birds with white-fronted and white-throated *G. atricapillus* of Palestine, and seeing differently coloured (not white-fronted) specimens from Asia Minor, he gave them a new name "*G. anatoliæ.*" As "Anatolia" is known to be inhabited by *G. krynickii*, and as Seebohm expressly states that his *G. anatoliæ* differs from the Palestine Jay in having the forehead and throat not white, but of the colouring of the Common Jay, it must follow that *G. anatoliæ* is a synonym of *G. krynickii* *.

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* Mr. Danford ('Ibis,' 1877, p. 263) mentions it from the south-eastern part of Asia Minor (Taurus), but were his birds compared with *G. atricapillus* and typical *G. krynickii*?

† See also a shorter account in 1899, Trav. Soc. Imp. Nat. St. Pet., as given below.

‡ Seebohm, Hist. Br. B. i. p. 570: "In Eastern Turkey, Asia Minor, the Caucasus, Palestine, and South Persia a Black-headed Jay is found, *G. atricapillus*, which principally differs from our bird in having the crown and nape black and the feathers of the forehead and throat nearly white. In Asia Minor many examples (*G. anatoliæ*) have the darker forehead and throat of our bird, but retain the black head." Here "our bird" means the British form of *G. glandarius*, and "the black head" refers to *G. atricapillus*.

As a matter of fact, Mr. Derjugin collected in Northern Armenia † (Batum and Artvin districts: Borchkha, Artvin, Ardanuch) a good series of Jays, all of them differing at a glance from other allied forms in having the forehead entirely black, only some of the nasal feathers being lighter. Further, these Armenian specimens differ from the true *G. krynickii* in the sides of the head being much more richly coloured. This Armenian Jay needing a new name, I call it

Garrulus nigrifrons, n. sp. Armenian Jay.

(*Garrulus melanocephalus*, var. *anatoliæ* apud Derjugin, 1899, Trav. Soc. Imp. Nat. St. Pétersb. vol. xxx. livr. 2, p. 64, *nec* Seebohm.)

Garrulus mystaceus, speculo cæruleo unico, fronte pileoque cum crista occipitali totis nigris, capitis lateribus intense vinaceis, in Transcaucasia occidentali australi ad Tschoroch fl. frequens.

The differences between the Palæarctic Jays with prevailing black on the crest may be tabulated as follows:—

I. Occipital crest uniformly black.
  a. Cheeks and ears white.
    a'. Forehead black-spotted, hind-neck bright rusty-red .... *cervicalis* Bp. Tunis.
    b'. Forehead white, hind-neck pale, vinous-buff. *atricapillus* Geoffr. Syria.

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* Of course, if birds from European Turkey and Asia Minor actually prove to differ constantly from Caucasian specimens in the decidedly greyer hind-neck and mantle, then Seebohm's name must hold good for them (but not for the Chorokh birds in any case).

† Armenia in zoological affinities; historically the Chorokh country is a part of Grusia.

b. Cheeks and ears vinous.
  c′. Forehead whitish vinous, sides of head pale vinous . . . . *krynickii* Kalenicz. Caucasus.
  d′. Forehead quite black, sides of head rich vinous. *nigrifrons*, n. sp. Armenia.
II. Occipital crest-feathers black, narrowly margined with rufous.
  c. Sides of head rufous, general coloration intense, vinaceous. . . . . *caspius* Seebohm. Talysh.
  d. Sides of head white, general colouring pale, greyish. *whitakeri* Hart. Morocco.

Other allied forms (such as *G. minor* Verr., *G. hyrcanus* Blanf., &c.) cannot possibly be described as having the black colour prevailing on the crest.

XXVII.—*Field-Notes on the Birds of Chinkiang, Lower Yangtse Basin.*—Part I.

By J. D. D. La Touche, C.M.Z.S., M.B.O.U.

In 'The Ibis' for 1891 (pp. 316–359 & pp. 381–510) Mr. F. W. Styan gave a very complete and accurate account of the Birds of the Lower Yangtse Basin, which he further augmented by supplementary papers in 1894 and 1899. The following pages, therefore, add but few species to the general list of the birds of that district, and consist mainly of local notes compiled during a five years' residence at Chinkiang. Local notes and lists of this kind are, I consider, necessary if it is desired to obtain an accurate knowledge of the distribution of birds in China, where the climate and physical features of the country vary to a far greater extent than is generally supposed.

Chinkiang, one of the most important prefecture-cities on the Lower Yangtse, is situated on the south bank of the river at its most northern bend, about 150 miles from the sea (lat. 32° 13′ N. by long 119° 25′ E.). The country on the north bank is a vast cultivated plain, much intersected by tidal creeks and canals. A few detached hills rise about twenty miles to the west, and there is another low range about half that distance to the east of Chinkiang. On the south bank, at the back of the city, a rough plateau of loess or yellow earth-hills, greatly cut up by cultivated valleys, extends for a few miles behind the suburbs. This loess country is bounded on the east and about seven miles to the south of the city by ranges of steep hills, some of which continue along the south bank of the river to Nanking, while other shorter ranges run in a southerly direction nearly to the boundary of the province of Chekiang, according to the latest map of Kiangsu Province issued at Sikawei by the Jesuits. The loess hills are bare save for grass or brushwood and a few plantations of scrub-oaks and pines. The hills proper, on the contrary, are well-timbered, and are in places covered with good-sized woods of oaks, chestnuts, and pines, generally with a thick undergrowth of bracken, scrub-oak, and various shrubs, which is, however, cut for fuel during the winter months.

The plain, when viewed in summer from the heights or from the river-banks, has the appearance of being thickly wooded. This is due to the rows of pollard-willows which everywhere border the fields, to the clumps of high trees and bamboo-shrubberies planted along the ponds at the backs of the villages, and to the rows of tall elms, willows, *Fortunea*, and other large trees lining the high embankments which traverse the lowlands in every direction. Changes of currents have within the last fifty years caused great alterations about Chinkiang, the river having eaten its way along the northern bank, and having receded so far from its original course on the south just above Chinkiang, that cultivated fields and dry reed-beds are now found where thirty years ago there existed a good anchorage for ships. The appearance of the country is also very different from what it was in the early sixties of the nineteenth century, when Captain Blakiston made his celebrated journey to Pingshan on the Upper River. At that time Chinkiang and the surrounding country had been utterly devastated by the Taiping rebels, and the wonderful fertility of this part of China is demonstrated by the fact that, when Blakiston first passed Chinkiang, what struck him most was "the entire absence of trees," and that, "saving on Silver Island, where the temples and groves had in some way or other escaped the general ruin, not a tree was visible." Thus the magnificent timber which is now to be seen on the alluvial plains is the growth of only forty years. The woods on the hills are even more recent, and the best of these were planted by the monks of some Buddhist monasteries, who for this noble work deserve the gratitude of all lovers of nature.

It is interesting to compare my Chinkiang list, based on observations made within a radius of fifteen miles from the city, with Styan's general list of Lower Yangtse Birds, as it shews that in Eastern China the Palæarctic and Oriental Regions meet as nearly as possible at Chinkiang. It will be noticed that some southern hill-birds (such as *Pomatorhinus styani*, *Stachyridopsis ruficeps*, Forktails, *Rhyacornis fuliginosa*, the Dipper, Whistling Thrush, and Chinese Jay), which might have been expected to wander as far as the Chinkiang hills, do not occur there even as stragglers, while such northern birds as *Gecinus canus* and *Parus palustris* are here at their southern breeding-limit. With regard to summer-birds, *Pericrocotus cantonensis* and *Xanthopygia tricolor* are the most notable. Evidently the latter does not breed at Shanghai, Kiukiang, or Hankow, the three points in the Lower Yangtse Basin where Styan has resided during the summer; so that Chinkiang is the southern breeding-limit of this bird. As to the Minivet, the finding of a single breeding pair shews that Chinkiang is the northern breeding-limit of this species. The migratory land-birds of Chinkiang are all mentioned in Styan's list, with the exception of *Locustella fasciolata*, *Phylloscopus tenellipes*, and *Cerchneis amurensis*. The first of these seems to be a rare bird in China, and so far Amoy and Chinkiang are the only places where it has been found. The second has already been taken by Père David near Kiukiang. The occurrence of the Falcon in South-eastern China and near the Yangtse delta is exceptional; its route is doubtless chiefly through Central and South-western China. The distribution of several of the other migrants on the Yangtse is irregular, as might be expected. Thus *Phyllo-*

scopus coronatus, which Styan states to be rare, is abundant at Chinkiang. Others, such as *Larvivora cyanea*, *Cyanoptila cyanomelæna*, the Yellow Wagtails, &c., &c., are of rarer occurrence than in the central parts of the Lower Yangtse Basin. In the same way we find certain differences among the winter visitants, the most notable of which is the complete absence of *Anthus cervinus* from the Chinkiang district.

The following stray or doubtful birds of Styan's list occur at Chinkiang:—*Geocichla sibirica* (regular autumn migrant), *Anorthura fumigata* (regular winter visitant), *Coccothraustes japonicus* (migrant, taken once), *Astur soloensis* (regular migrant).

My list of water-birds is very incomplete, and there is no doubt that most of those mentioned by Styan occur at Chinkiang on migration or in winter. The want of local native collectors has prevented me from adding more species.

I am greatly indebted to Mr. C. B. Rickett for having most kindly sent me, in the spring of 1902, his collectors Tang Wang-Wang and Tang Chunkai. These men stayed at Chinkiang for two months, and made a very complete collection of the spring-migrants and summer-birds there. They also cleared up the mystery of *Cettia canturiens*, besides procuring a number of rare migrants which otherwise would not have appeared in the Chinkiang list.

1. CORVUS TORQUATUS Less.

Styan, Ibis, 1891, p. 357; La Touche & Rickett, Ibis, 1905, p. 25.

The Collared Crow is a very common resident at Chinkiang. With the exception of the Magpie, it is the earliest breeder of the Crow-tribe in that part of China. It nests in pine-woods on the hills and on tall trees on the plain, often close to villages and country-houses, or even in the suburbs. Building commences in February, and nests are often completed by the beginning of March. The eggs are laid in March or early in April. So far as I know, the greatest number in a clutch is four (clutches taken at Foochow generally contained three eggs).

The eggs have already been described by Rickett and myself. We have, however, omitted to state that they have a tendency to be very heavily blotched, although, of course, as in all Crows' eggs, lightly-spotted varieties occur. Thirteen eggs, taken at Chinkiang, average 1·75 × 1·20″. The largest of these is 1·94 × 1·20″ and the smallest 1·57 × 1·18″. The diameter ranges from 1·26 to 1·13″.

2. Corvus macrorhynchus Wagl.
Styan, Ibis, 1891, p. 358; La Touche & Rickett, Ibis, 1905, p. 26.

This Crow is also a common resident. It breeds in much the same situations and localities as the Collared Crow, and is even more confiding, as I have seen a pair nesting in the chimney of a foreign house in the midst of a crowded suburb. Nest-building takes place in March and April. I have eggs taken on April 16, 20, and 24; the former fresh, the latter slightly incubated. The pair which was robbed on April 16 built again soon afterwards in a tall cypress tree in the Custom House garden, and on May 15 had laid three slightly incubated eggs. The nest is lined with cow-hair, I believe. Five eggs compose the full clutch. The texture of the shell is rather smoother than that of the eggs of the Collared Crow. Eighteen eggs taken at Chinkiang are all fairly uniform both in ground-colour and markings. The ground-colour is, in every specimen but one, of a light bluish green, blue in comparison with the eggs of *C. torquatus*. The surface-marks are sap-green, small and rather streaky or elongated. One egg of a clutch taken by my men has a rough cap of underlying reddish-grey confluent spots, with a few of the same sort on the rest of the shell. Another has the ground-colour suffused with green. The remaining three resemble the ordinary type, but have besides a number of blotches scattered over them. All these eighteen eggs have underlying greyish-red spots, which do not interfere with the general blue and-green aspect of the egg. The shape is ovate or elongated ovate; none incline to an oval shape. They average 1·67 × 1·14″. The largest is 1·76 × 1·11″, the smallest 1·56 × 1·11″. The largest diameter is 1·20″, the smallest 1·06″.

3. CORVUS PASTINATOR Gould.

Styan, Ibis, 1891, p. 358.

The Eastern Rook is resident and extremely abundant about Chinkiang. It breeds every year on the trees lining the bund, just outside the gates of the Custom House, and also, at Golden Island, on the trees outside the Temple gates. The sites for the nests of the Bund Rookery are generally decided upon at the end of January, the places chosen being occupied by the birds for some days previous to building, and the first nests are finished by the end of March. The building of outlying nests and of those of the younger (?) birds is not allowed to proceed until the first half-dozen or so of the early nests—probably those of the leading members of the community—have approached completion, and the former are not ready before the middle of April.

Two clutches, of four and five eggs respectively, taken from nests in this rookery on April 9, shew great variation—from greenish blue almost unmarked to dark eggs so thickly streaked with sepia-brown and sap-green that the ground-colour is quite hidden. The ground-colour is greenish blue, bluish grey, or dull green; the surface-marks are in the form of longitudinal streaks, specks, or, more rarely, spots, dull brown, sepia, or sap-green in colour, and there are, on one egg, underlying blotches of pale pinkish violet. Several of the eggs are suffused or smudged all over with sap-green, dark brown, or both. The appearance of these nine eggs is very different from that of the eggs of *C. torquatus* and *C. macrorhynchus*. The eggs of clutch A (four, nearly fresh) are elongated ovate in shape and average 1·72 × 1·09″. The largest is 1·78 × 1·10″ and the smallest 1·65 × 1·06″. The eggs composing clutch B (five, incubated) are in shape broad ovate (3), ovate, and rather elongated ovate. They average 1·54 × 1·11″; the largest is 1·66 × 1·12″ and the smallest 1·47 × 1·15″.

4. CORVUS DAURICUS Pall.

Styan, Ibis, 1891, p. 358.

Extremely abundant throughout the winter. It arrives in October and leaves early in spring.

5. Corvus neglectus Schl.

Styan, Ibis, 1891, p. 358.

Much less common than the preceding species. A few individuals are generally to be observed among the flocks of *C. dauricus*, and I have seen small companies wholly composed of these birds. Both species mingle with the Rooks in the fields. I have noticed this Jackdaw until late in March. The stomachs of all the examples of this and the preceding species examined by me at Chinkiang contained chiefly paddy or wheat, occasionally seeds.

6. Pica caudata L.

Styan, Ibis, 1891, p. 358.

The Magpie is, with the Sparrow, perhaps the most abundant of our residents. An almost uninterrupted stream of these birds may be seen in the late afternoon flying over Chinkiang on their way from their feeding-grounds to their roosting-places. They begin to build early in the year, but fresh eggs are to be found throughout April. The nests at Chinkiang are not always domed, as I have three eggs taken from a nest which the finders assured me was open, while a fourth was taken in my presence from an apparently perfectly open nest.

7. Cyanopolius cyanus (Pall.).

Styan, Ibis, 1891, p. 359.

The Blue-winged Magpie is very common in the plains, while in winter parties frequent copses and gardens about the villages and are also to be met with along the willow-bordered creeks and ponds. It breeds in colonies on high trees around the villages of the plain. The nest is generally difficult of access, being nearly always placed high up in a tree, and as a rule in a thin fork some distance from the trunk. I have not had an opportunity of watching the building of the nest, but it is generally completed about May 20. A number of nests examined on May 29 were either empty or contained one egg, but on the same day I obtained from a native a clutch of four eggs. The nests are built of sticks outwardly; and within there is a thick lining, or, more properly, an inner nest composed of moss, cows' hair, wool, fibres, and twigs. A good deal of mud is used as a base to the inner nest. The inner diameter of one lining, which I measured, was 5½ in., and the depth about 1½ in. Besides the clutch mentioned above I have obtained fresh eggs on May 26, a few that were fresh and a number that were incubated on June 14. Two eggs brought to me on July 11 were, one incubated, the other rotten.

Out of twenty-seven eggs taken, eight have the ground-colour of a light greenish grey, seventeen of a brownish-yellow clay-colour or pale olive-brown, and one of an intermediate shade. The markings consist of roundish spots and specks, or sometimes of short lines, of brown and purplish grey, the latter often on the surface as well as beneath it. As a rule every egg has also a few surface-specks of very dark brown. The shape is ovate or very rarely elongated ovate. The twenty-seven eggs in my collection average 1·08 × 0·83″; the largest is 1·16 × 0·87″ and the smallest 1·00 × 0·79″.

8. Urocissa sinensis (L.).

Styan, Ibis, 1891, p. 359; La Touche, Ibis, 1900, p. 40; La Touche & Rickett, Ibis, 1905, p. 26.

This bird is common on the hills. It also occurs on the plain and occasionally appears in the British Concession at Chinkiang. Two fresh eggs were brought to me on June 12; they resemble those described in 'The Ibis' (1900, p. 40).

9. Parus minor T. & S.

Styan, Ibis, 1891, p. 341; La Touche, Ibis, 1899, p. 401; La Touche & Rickett, Ibis, 1905, p. 27.

The common Tit of the locality. I have three eggs taken on May 20 from a hole in a tree, which were quite fresh; they are pure white with rather large spots and specks of two shades of light red over underlying violet-reddish markings. They measure 0·65 × 0·50″, 0·64 × 0·50″, and 0·64 × 0·49″. They differ from those obtained in Fohkien in having underlying markings and in their lesser size.

I have also a young bird nearly full-grown which was shot on May 9, so that no doubt two broods are reared in the season.

10. Parus palustris L.

The Marsh-Tit, which has not before been recorded from the Lower Yangtse, is resident in the Chinkiang country, but is not abundant there. I have seen it both in summer and in winter on the plain; and on May 20, 1900, I shot an example in a wood, where it probably breeds every season, as the collectors shot another two years afterwards at the same place and on the same date.

Specimens obtained at Chinkiang do not differ from a Chefoo specimen given to me by Mr. Styan.

11. Acredula glaucogularis (Gould).

Styan, Ibis, 1891, p. 342.

This Long-tailed Tit is a very common resident. It breeds in March and April. I have obtained eggs or seen nests on the following dates:—

March 22 (new nest, no eggs); March 22 (1 fresh egg, nest half torn down); March 30 (7 eggs, incubated); April 9 (7 eggs, fresh); April 9 (8 eggs, incubated); April 10 (five eggs, fresh); April 10 (two eggs, fresh); April 10 (new nest, not finished); April 14 (6 eggs, hard-set); April 18 (nest, with very young birds); April 20 (4 eggs, incubated); April 20 (8 eggs, nearly hard-set); April 26 (nest, with half-fledged birds); April 29 (nest, with young birds, feathers in quill).

On April 20 I saw a family of young birds travelling along a hedge and on May 20 I shot two in their first plumage.

The nest is generally placed in a cypress, a common tree about Chinkiang, but not infrequently in a willow. That seen on April 26 was in a dwarf pine, that on April 29 had been taken from a tea-plant, besides which I have seen an old nest on some dwarf bamboos in a wooded ravine. The fabric is domed, of a more or less roundish-oval or oblong shape, with the aperture near the top. It is made of moss, lichen, scraps of grass, &c., bound with cobwebs, and has a very thick lining of chickens' or wild doves' feathers. The measurements of seven nests are: outer length from 6 to 8 in., outer greatest breadth $2\frac{3}{4} \times 3$ in. to $3\frac{3}{4} \times 4$ in., circumference $9\frac{1}{4}$ to 11 in.; inner height $3\frac{1}{4}$ to 4 in., inner diameter 2 to $2\frac{1}{2}$ in.; aperture 1 in., base of aperture to base of nest $3\frac{1}{2}$ to 4 in.

The number of eggs in a clutch is from six to eight In colour they are pinkish white or pure white, minutely speckled and streaked, as a rule, with pale Indian-red or violet-red, the marks being nearly always more numerous about the larger end. One of my clutches of eight eggs has hardly any sign of speckling and has faded to a dull greyish white, with a few faint specks in one or more cases. Another clutch of eight eggs is somewhat profusely speckled and streaked with pale red and underlying violet-red, seven of the eggs having a thick zone of confluent marks round the larger end. When fresh the eggs have no gloss. They vary from a short broad-ovate shape to a long ovate, but are usually almost perfectly ovate. Fifty-three eggs average 0·56 × 0·44″. The largest of these is 0·60 × 0·46″ and the smallest 0·50 × 0·42″.

The young birds shot on May 20 answer so closely to the description of *A. vinacea* (Verr.) that it appears to me highly probable that *A. vinacea* was founded on the young of *A. glaucogularis*. Père David, in 'Les Oiseaux de la Chine,' p. 292, while remarking on the difference of plumage between *A. vinacea* and *A. glaucogularis*, which led him to consider the former a good species, apparently suspected that this might be the case, and ended his remarks on *A. vinacea* with these words: "la question néanmoins mérite d'être étudiée."

12. ÆGITHALUS CONSOBRINUS Swinhoe.

Styan, Ibis, 1894, p. 333.

On April 27, 1900, I shot a solitary male of this species, which was perched in a small tree by a pond in the loess country. I met with no other specimens until February 15, three years later, when I saw hundreds in the reeds by the river a few miles below Chinkiang. They were feeding among the reeds, and three which I shot had their stomachs full of seeds. Now and then a numerous party would fly up with a cry not unlike that of a *Zosterops*, and after wheeling about in mid-air would settle again in a neighbouring patch of reeds. Although I did not happen to see any of the birds during subsequent shooting-expeditions, there is no doubt that they are to be found every winter in the reed-beds on the river.

13. Suthora webbiana Gray.

Styan, Ibis, 1891, p. 336; La Touche, Ibis, 1899, p. 189.

A breeding pair shot on May 7 and a male shot on June 10 differ only from the spring and summer birds from N.W. Fohkien in not having the red of the head and neck extended so far down the back. Three birds shot in April are very much duller, while six skins obtained in winter are intermediate between Shanghai and N.W. Fohkien specimens, and are very like Anhwei skins. Chinkiang birds would thus appear to be, on the whole, a less bright form of *Suthora webbiana* (*Suthora suffusa* Sw.) of Fohkien. I must here correct a slip which I made in my notes on this bird ('Ibis,' 1899, p. 189). I then wrote that all the Kuatun breeding birds "have the intensely ruddy head and neck well separated from the grey-brown back"; this should read "have the intensely ruddy head, neck, and upper back, in worn specimens, well separated from the lower back." Birds in fresh plumage have the lower back also somewhat suffused with red. The difference between N.W. Fohkien winter- and summer-birds is that the head, neck, and upper-back are browner in the former.

This *Suthora* is extremely common about Chinkiang, both on the scrub-covered hills and in the plain. It breeds in April, May, and throughout June. Without doubt two broods are reared, as full-fledged young are about in May and June. I have found nests in nettle-beds in the plain and on reeds in dry and flooded reed-beds. Two of those found on reeds were built at a height of about ten feet from the ground, but, as a rule, the nests are placed no higher than four or five feet from the ground or water. Nests taken from the nettle-beds resembled those from Kuatun, and were made of coarse grass, reed, and bamboo-leaves, bound with cobwebs, and lined with fine grass-stems. The two nests from the reed-beds mentioned above were made of strips of whitish reed-skin, bound with cobwebs, and lined with fine grass-stems and a little hair. As in N.W. Fohkien, blue eggs are the commonest at Chinkiang, but I have also obtained there a number of the pale-coloured varieties.

14. PARADOXORNIS HEUDEI David.

Styan, Ibis, 1891, p. 336.

This handsome Crow-Tit is very common in winter in the reed-beds a few miles below Chinkiang. I have also seen it in the bare reed-fields after the crop has been cut, and in bushes and trees in the vicinity. When travelling and feeding in the reed-beds, the birds' constantly repeated trilling notes are heard a long way off, and this, coupled with the loud noise made by their wings when flitting about the reeds, betrays their presence at once. I was unable to find any nests, nor did I see any specimens in summer. They feed on the ground as well as on the reeds.

15. TROCHALOPTERON CANORUM (L.).

Styan, Ibis, 1891, p. 334; La Touche, Ibis, 1899, p. 180.

Common on the higher wooded hills, but also found in copses on the plain. It breeds in April, May, June, and July.

A nest which I took on May 5 was placed in a small holly-bush in a wooded ravine. It contained four incubated eggs. This nest was composed of leaves, coarse grass-blades, and twigs, and had a lining of pine-needles. The measurements were: outer diameter about $5\frac{1}{2} \times 6$ in., outer depth $4\frac{1}{2}$ in., inner diameter $3\frac{1}{4}$ in., inner depth about $2\frac{3}{4}$ in. Twelve eggs taken near Chinkiang average $1{\cdot}04 \times 0{\cdot}81''$; the largest is $1{\cdot}10 \times 0{\cdot}83''$ and the smallest $0{\cdot}95 \times 0{\cdot}80''$.

16. DRYONASTES PERSPICILLATUS (Gm.).

Styan, Ibis, 1891, p. 334; La Touche & Rickett, Ibis, 1905, p. 28.

Abundant and resident. It breeds in the bamboo-copses round about the villages and also in the reed-beds. The nests which I have seen in the former were all placed on bamboos at a considerable height from the ground—twelve feet at least. Two half-torn-down and deserted nests found on June 10 in a patch of reeds were about five feet from the ground: one contained three slightly incubated eggs, the other was empty. Fresh eggs were brought to me on June 21, July 11 and July 13, so that no doubt two broods are reared here. The Chinkiang nests which I have seen resemble those taken at Foochow, but ten eggs taken at Chinkiang are much larger than Foochow eggs. They average 1·14 × 0·86″. The longest is 1·20 × 0·86″, the shortest 1·07 × 0·85″.

17. Zosterops simplex Swinhoe.

Styan, Ibis, 1891, p. 352; La Touche, Ibis, 1899, p. 431; La Touche & Rickett, Ibis, 1905, p. 31.

Common in summer. Arrives in the latter half of April, and remains until the end of September. I have seen full-fledged young being hawked about on May 21. This bird is extremely common in the gardens during September.

18. Pycnonotus sinensis (Gm.).

Styan, Ibis, 1891, p. 345; La Touche & Rickett, Ibis, 1905, p. 31.

Very abundant. Eggs may be obtained up to August 17, and I have seen a nest with unfledged young on September 4. Four eggs obtained from natives on June 17 and two on July 17 are very different from the rest of my series. The ground-colour is pink, and they have heavy blotches, chiefly on the larger half of the egg, of a dark claret-colour and violet-grey over pale grey underlying blotches. They average 0·91 × 0·695″, the largest being 0·95 × 0·72″, and the smallest 0·88 × 0·68″. The nests were normal, so that I have no hesitation in referring them to this common species.

This Bulbul has, at Chinkiang during the breeding-season, a note which I have not heard it utter in the south. It is a very favourite cage-bird with the Chinkiang natives.

19. Pycnonotus xanthorrhous Andersson.

Styan, Ibis, 1891, p. 345.

This Bulbul is rather a scarce resident at Chinkiang. I bought on July 7 a full-fledged nestling, which I kept as a cage-bird. I was shown an empty nest placed high in a hedge, but when I returned on June 5 to take the eggs it had disappeared.

20. Spizixos semitorques Swinhoe.

Styan, Ibis, 1891, p. 345.

This handsome Bulbul is a common resident, found both on the lower wooded hills and in the plain. I have two clutches of eggs. The first, consisting of four specimens, was brought to me together with the remains of the nest on June 12, 1903. The following year, on June 18, I took a nest containing three fresh eggs from a small willow growing on the edge of a pond between a bamboo-copse and a patch of reeds. It was suspended between the trunk of the tree and a thin twig that grew up nearly parallel to it, and was very lightly fastened to the twig by a couple of tendrils and a few cobwebs. It is a thin, flattish, and fragile-looking cup, made of small twigs, tendrils, and a few seeded reed flower-tops. The inner edge of the cup is made of the last-named. It has a very thin lining of tendrils and human hair; one long weed-stalk hangs out from the edge, and a certain amount of floss-silk is twisted amongst the outer materials. It can be seen through in all its parts. The outer height is about 3 in., the outer diameter about 5 in., the inner depth $1\frac{1}{2}$ in., and the inner diameter $2\frac{1}{2}$ in. I have another nest which was built by a pair of birds on a small cypress in our garden. They began it on the 18th of July, and finished it on the 21st. Both birds joined in the work. They were by no means shy and were very noisy. On the 26th the female was sitting on the nest, but next day the birds had gone. They were probably frightened away by cats, as the site was very much exposed and just below a neighbour's roof. This nest is of the same style as that described above. It is made of thin twigs, grass-stems, and one blade of coarse grass, and is lined with very fine tendrils, grass-roots, and dark brown fibres. It has also a long weed-stem hanging from its side. It measures: outer height just under 3 in., outer diameter 4½ in., inner depth under 2 in., inner diameter 3 in. Another nest which was being built in a bush on a precipitous hill-side just behind our house, about June 19, probably by the same pair of birds, was also deserted before eggs were laid.

In general appearance the eggs of this Bulbul resemble finely speckled examples of those of *Pycnonotus sinensis.* The eggs obtained on June 12 have a very pale mauve-white ground, and are covered with specks and short broad streaks of claret-colour over numerous underlying greyish-violet specks and broad streaks. Those taken on June 18 are pink, covered with spots, specks, and a few broad streaks of claret-red over underlying reddish-lilac spots and blotches. These seven eggs average 0·99 × 0·74″. The largest is 1·05 × 0·75″, the smallest 0·95 × 0·71″. The shape varies from ovate to longish ovate.

21. Buchanga atra (Herm.).
Styan, Ibis, 1891, p. 346.

Seen in May, September, and October. I do not think that it breeds near Chinkiang.

22. Chibia hottentotta (Linn.).
Styan, Ibis, 1891, p. 346; La Touche & Rickett, Ibis, 1905, p. 34.

One example was seen on May 5, and another on May 15.

23. Anorthura fumigata (Temm.).
Styan, Ibis, 1889, p. 445; 1891, p. 342.

This Wren winters in the neighbourhood of Chinkiang. Nearly all the birds that I have seen were on the banks of the narrow ponds which divide the hamlets in the plain from the paddy-fields. They lurked about the roots of the pollard willows, and when frightened hid in the hollow trunks or among brambles and stacked straw near the water. One, on being pursued, flew to the eaves of a cottage and escaped under the thatch.

Three males, shot on February 23 and March 3, appear quite similar to specimens from Ichang given to me by Mr. Styan.

Note.—An example of the Wall-Creeper (*Tichodroma muraria*) was sent to me from N.W. Kiangsu by Father Perrin, S.J. There is no reason why this bird should not occur on the Chinkiang hills.

24. LOCUSTELLA LANCEOLATA (Temm.).

Styan, Ibis, 1891, p. 340.

Very common on the grass-covered hills in May, and also seen in wheat-fields and damp sedge-fields during the same month. In September and October it is common enough on the grassy hills and in the lowlands. A late bird, flushed from some grass in a field on November 6, took refuge in a willow.

The soft parts, &c., of a female shot on May 27 are:—Iris brown; upper mandible black; lower mandible and gape pink, the lower mandible tipped with dark greyish; legs pinkish flesh-coloured. Total length 5·55 in.; wing 2·35 in.

25. LOCUSTELLA CERTHIOLA (Pall.).

Styan, Ibis, 1891, p. 340.

I have met with this Grasshopper-Warbler but twice. On May 20 I found quite a number in a sedge-field on the plain, two of which I shot. The Fohkien collectors shot another there two days later. Again, on September 7, I put up three or four out of a ditch overgrown with reeds and high grasses. I suppose that they must visit us on passage every year, as elsewhere on the Lower Yangtse. The birds shot in May have the under parts white, with the flanks and the sides of breast olive-brown. One has traces of spots on the breast. Those seen in September appeared to have bright yellowish under parts.

26. LOCUSTELLA FASCIOLATA (Gray).

A male in fine plumage and a female were shot on the hills by the collectors on May 28 and June 5. This species has not been recorded by Styan from the Lower Yangtse.

Swinhoe (under *L. insularis* Wallace, P. Z. S. 1871, p. 352) states that "it comes to Amoy in May in large numbers, and disappears again almost immediately, probably into the interior of China or beyond." Père David apparently did not meet with this Warbler. Neither Rickett nor I have observed it near Foochow or elsewhere in Fohkien. Seebohm ('Birds of Japan,' p. 72) states that "this species breeds near Lake Baikal and in the valley of the Amoor. It passes along the coasts of China and Japan on migration, to winter in the islands of the Malay Archipelago." I took the following notes on the male specimen mentioned above:—Iris rich brown; upper mandible blackish, edged with pink; lower mandible pink, suffused with plumbeous; legs dark flesh-coloured; claws much lighter flesh-coloured. Total length 7·30 in., bill 0·61 in., wing 3·20 in., tail 2·70 in., tarsus 1·02 in. Testes large. The ovary of the female was not very much developed.

27. ACROCEPHALUS ORIENTALIS (T. & S.).

Styan, Ibis, 1891, p. 340.

These Reed-Warblers arrive at the end of April in great numbers. They start building in May, and I have obtained full clutches on May 26 and 27. The majority of the first nests, however, do not contain the full number of eggs before the first week of June. Nest-building and laying goes on right through that month and also during July; for I have taken incubated eggs on July 1, and have had a fresh egg brought to me on July 11. There are, doubtless, several broods in the season. The outer shape of the nests is most variable; sometimes very little material is used, and sometimes the egg-cavity is sunk in a large quantity of weeds and grasses. They are generally attached to two or three reeds, occasionally to as many as five or six, this depending on how close the reeds grow, while they are built at a height of five or six feet from the ground. When the river is high and the reed-beds are flooded, the growth of the stems probably maintains them several feet above the water. The material employed consists of dry coarse and fine grasses, roots, and water-weeds. The lining is of seeded grass-tops, generally of stripped reed-tops, which are of a bright yellow colour. The outer measurements of thirteen nests taken on May 26 and 27 and June 1, 3, and 6 vary from 3½ in. to 6 in. in height and from 3½ in. to 4¾ in. in diameter. The inner measurements are: depth of cup 2 to 3 in. and diameter 2 to 2½ in.; the average measurements being roughly, depth of cup 2½ in., diameter 2¼ in. The back wall of the nest is nearly always higher than the front, sometimes as much as 1 inch. The full clutch appears to vary from three to five. The most usual shape of the eggs is longish ovate, with both ends attenuated and approaching to oval. Some eggs are perfectly oval and some are truly ovate. An abnormal clutch taken on June 3 has two of the three eggs of a broad blunt ovate shape. The ground-colour is very pale greenish blue, or sometimes pale sea-green, and they are blotched, spotted, or speckled with different shades of umber-brown and dark purple over more or less apparent reddish-purple underlying marks, the brown spots having a greenish and *mossy* appearance. The eggs are very variable in size and markings, some being thickly blotched, while others are merely covered with small specks. Forty-six eggs average 0·85 × 0·62″. The longest measures 0·91 × 0·64″, the shortest 0·78 × 0·61″. The broadest is 0·82 × 0·67″, and the narrowest diameter (fairly common) is 0·60″.

Some of the females taken along with the eggs and nests described above were assuming fresh plumage, some were in old faded dress, and one or two had newly moulted. Wing 3·06 to 3·18 in.

A male shot on May 5 and another on May 29 were assuming fresh plumage: wing 3·20 and 3·35 in. One shot on May 20 had bright new feathers, with the tail in moult: wing 3·30 in.

28. ACROCEPHALUS BISTRIGICEPS Swinhoe.

Styan, Ibis, 1891, p. 340.

Two examples were shot on May 21 in a sedge-field, and others were seen there at the same time. I shot a very worn example on the 7th of September following.

Note.—I heard in summer in the reed-beds, on two or three occasions, a call-note and song which were either those of *A. bistrigiceps* or *A. agricola*; but I could not see the birds, and was unable to procure the nest. Styan states that both these species breed at Kiukiang, and I have no doubt that they will be found nesting among the Chinkiang reed-beds.

Note.—In 'The Ibis' for 1900, p. 51, I wrote in error that *Calamoherpe concinens* Sw. (=*A. agricola* Jerdon) was founded on examples of *A. agricola* collected by Père David near Peking. But I now find that Swinhoe described the bird from an example which he himself shot just outside Peking (P. Z. S. 1870, p. 432).

29. Cisticola cursitans Frankl.

Cisticola cisticola (Temm.); Styan, Ibis, 1891, p. 335.

The Fantail-Warbler is extremely abundant in summer about Chinkiang. It breeds both on the plains and on the grass-covered hills. The two or three nests which I have seen *in situ* were all empty and were shown to me by natives; but a great number with eggs were brought to me during the summer of 1903, between June 18 and August 17. June appears, however, to be the principal breeding-time. There are doubtless several broods in a season. All the nests that I have seen were quite similar in shape and construction. They were in the form of a deep pear-shaped purse, made of the softest grass-down, felted together and secured by cobwebs to the grasses in the midst of which they were built. They were placed at heights varying from a few inches to a foot and a half from the ground. The supporting plant was in every case a clump of grass. The full clutch appears to consist of five or six eggs, usually six, but once a nest containing seven very small eggs was brought to me. A nest taken on June 20 contained, besides two fresh eggs, a Cuckoo's egg; and another taken on June 28, with five eggs, had also a Cuckoo's egg in it. Both these

Cuckoos' eggs were, I have no doubt, those of the Common Cuckoo.

The eggs of the Fantail-Warbler procured at Chinkiang are white or bluish white, speckled, spotted, or blotched with light or dark brownish red (madder-brown) and reddish violet or reddish grey, the latter colour being either in the form of dark surface-marks or well-defined shell-spots. Of the nineteen clutches in my collection, eight are more or less finely speckled, eight are spotted or both spotted and speckled, while in the three others the spots are so large as to become blotches. In many cases the markings are chiefly disposed about the larger end of the egg. The blotched specimens have a ring of blotches round the large end, the rest of the shell being clear of marks save for a few spots or specks. My 86 eggs average 0·60 × 0·47″, the largest being 0·65 × 0·48″ and the smallest 0·55 × 0·45″.

30. Phylloscopus borealis (Blas.).

Styan, Ibis, 1891, p. 339.

Common throughout May. It is the last of the Willow-Warblers to appear in spring. It passes again in September, but seems to be much less common during the autumn migration.

This Willow-Warbler, although generally arboreal in its habits, occasionally ventures down to the ground. On May 22, 1902, while strolling about the grounds of the Consulate, I noticed in a tree by the path a small bird, which, as I stood still to watch it, flew down to the bushes and high grass on the side of the walk, and thence to the path itself, where it remained hopping about for a short time, flying up now and then to catch a passing insect. From the path it flew back into the long grass and brushwood, where it hunted for a considerable time, always keeping near the ground. As I managed to remain within a few yards of the bird, I had a very good view of it and could see that it was not *P. coronatus* nor *P. tenellipes.* The colouring was that of *P. borealis,* and the legs were dark, so that I could refer it to no other species.

The call of this Willow-Warbler, during its stay about Chinkiang, is a loud and sharp "*tsic-tsic.*"

31. Phylloscopus tenellipes Swinhoe.

This Warbler is apparently common during May. It frequents the undergrowth on the wooded hills. Only two out of thirteen examples shot between May 3 and 25 were females. The call, according to the collectors, is a loud "*tic-tic.*"

Père David found this Willow-Warbler near Kiukiang on July 30, 1868 (Bull. Nouv. Arch. Mus. Paris, vol. viii. p. 50).

32. Phylloscopus coronatus (Temm.).

Styan, Ibis, 1891, p. 339.

This Willow-Warbler appears about April 20, and is extremely abundant during May. I have obtained a specimen as late as May 26. The short but pleasant song is constantly heard during that month.

33. Phylloscopus superciliosus (Gm.).

Styan, Ibis, 1891, p. 339.

Very abundant from about April 20 to May 20. It passes again in September.

34. Phylloscopus proregulus (Pall.).

Styan, Ibis, 1891, p. 339.

I shot a single specimen one year on November 24, in a wood among the hills; and another year, on October 24, I saw a number flying about some gardens and copses on the plain. I have not noticed this species in spring.

35. Cettia canturiens (Swinhoe).

Cettia canturiens (Sw.) and *Cettia minuta* (Sw.), Styan, Ibis, 1891, pp. 340, 341.

The difference in size between males and females of this Bush-Warbler is considerable, and induced Swinhoe to describe the female under the name of *Arundinax minutus* ('Ibis,' 1860, p. 52). Owing probably to the want of correctly-sexed specimens, the mistake has stood uncorrected for forty-five years! As, during all the years that I had collected birds in China, no female specimens of *C. canturiens* had come under my notice, I began a few years ago to suspect that some mistake had been committed in the identification of these birds. I had seen and collected the so-called *C. minuta* in Formosa, but only in winter, and the three specimens which I shot I determined doubtfully as females. During the first year that I was at Chinkiang I shot a couple of these *Cettia minuta*, both undoubted females, but no females of the larger bird; so that when Rickett sent me our Fohkien men in 1902, I gave them special instructions to look for nests of *C. canturiens*, and to secure in every case the female and also the male, if possible. This was done. The collectors shot at the nest several females, and in one case both male and female. The females shot by our men in nowise differ from my specimens of *C. minuta* from Formosa, nor from the two females already shot by me at Chinkiang; while the male shot at the nest in company with one of the females is an undoubted *C. canturiens*. To complete the evidence, Rickett and I, in June 1905, looked through the series of *C. minuta* in the British Museum, and ascertained that they were identical with my specimens. All but one or two of the sexed specimens of *C. canturiens* and *C. minuta* in the B.M. collection are marked ♂ and ♀ respectively. The exceptions are no doubt due to error in sexing. *Cettia canturiens* Swinhoe and *C. minuta* Swinhoe are therefore but the male and female of one species—*Cettia canturiens* Sw.

Fifteen males from Formosa, Fohkien, and Chinkiang vary in length of wing from 2·83 in. to 3·05 in., and ten females from Formosa and Chinkiang from 2·25 in. to 2·46 in.

Cettia cantans minuta from Formosa is probably also *C. canturiens* ♀, but I have only one example of this bird, sexed doubtfully as a male.

Swinhoe wrote (P. Z. S. 1863, p. 36) of *C. minuta* that it is entirely distinct in manners and song (from *C. canturiens*). Most probably he took the song of *C. sinensis* of S. China to be that of his *C. minuta*, both *C. canturiens* and *C. sinensis* being often found breeding in the same localities. The eggs and nest attributed by him to *C. minuta* ('Ibis,' 1863, p. 82) are evidently those of *Suthora bulomachus*.

Cettia canturiens arrives at Chinkiang in the beginning of April, and by the end of that month is extremely common on the hills by the outskirts of woods and among thick scrub, or anywhere in the valleys where suitable cover occurs. During the nesting-season the males may be seen in the evening perched on the topmost twigs of bushes, singing lustily; but the females are very difficult to observe and creep about the bushes, seldom shewing themselves. Breeding takes place in May and June. I have taken, obtained, or seen nests on the following dates:—

1900: 20th May (5 eggs, incubated). 1901: 12th May (3 eggs, clutch incomplete); 26th May (new nest, empty); 10th June (3 nests, with 5, 5, 4 eggs, incubated). 1902: 13th May (5 eggs, addled or much incubated); 13th May (5 eggs, somewhat incubated; ♀ shot at nest); 13th May (5 eggs, somewhat incubated; ♂ ♀ shot at nest); 15th May (4 eggs, fresh); 15th May (5 eggs, nearly fresh; ♂ shot at nest); 15th May (4 eggs, hatching; ♀ shot at nest); 19th May (5 eggs, fresh; ♀ shot at nest); 24th May (4 eggs). 1903: 10th May (2 eggs, not taken); 28th June (2 eggs, fresh).

The first nest on this list was taken by me from a bush in a ditch. The empty nest, the eight nests taken in 1902, and that taken on May 10th, 1903, were found among thick scrub on the hills, and were built in low bushes not far from the ground. The nest of this *Cettia*, like that of *C. sinensis*, is domed, with a side or rather front entrance. It is made of blades of coarse grasses, bamboo-leaves, and a few dead leaves of oak &c., while it is lined with fine grass-stems, fine stripped grass-tops, and occasionally a few feathers. The structure is very fragile, and on being handled soon falls to pieces. Seven nests measure as follows:—Outer height from 5 to 7 in.; outer diameter, on average, about 4 in.; from base of nest to base of aperture from 3½ to 4½ in.

The aperture, which is near the top of the nest, is about 2 in. broad and from $1\frac{1}{4}$ to $1\frac{1}{2}$ in. high. Inside, the height is about 4 in., but in one nest it is only 3 in. and in another as much as $4\frac{1}{2}$ in. The depth of the egg-cavity (from bottom of cup to base of aperture) varies from $1\frac{3}{4}$ to 3 in. The inner diameter averages $2\frac{1}{4}$ in., but one nest has an inner diameter of only 2 in., while in another this measures $2\frac{1}{2}$ in. Five or sometimes four eggs make a full clutch. In shape the eggs are generally ovate, but they are often oval with either blunt or somewhat pointed ends. All but one of the clutches collected are glossy. There is a good deal of variation in the colouring, light red of a somewhat "old pink" tint being by far the most common; but very bright brick-red and dark dull brick-red clutches are found. There is often a darker ring or a cap on the larger end, and sometimes darker specks or a stippling of less dark specks all over the egg. Fifty-five eggs average $0{\cdot}78 \times 0{\cdot}58''$; the largest is $0{\cdot}82 \times 0{\cdot}61''$ and the smallest $0{\cdot}71 \times 0{\cdot}57''$.

36. CETTIA SINENSIS La Touche, Ibis, 1899, p. 207.

Cettia fortipes (Hodgson); Styan, Ibis, 1891, p. 341.

Common on the higher hills during the breeding-season. Three specimens shot on March 28, May 13, and June 20 do not differ from others from Fohkien. I could not procure any nests at Chinkiang.

37. SUYA CRINIGERA Hodgson.

Styan, Ibis, 1891, p. 335.

Resident on the hills, but not common. I have seen it in woods and in pine-plantations, and during autumn and winter a party used often to appear among the bushes on the cliff just at the back of our garden.

[To be continued.]

XXVIII.—*Notes on the Parrots.* (Part V.)

By T. Salvadori, H.M.B.O.U.*

Fam. V. Psittacidæ (Cat. Birds Brit. Mus. xx. p. 137).

Subfam. Conurinæ (op. cit. p. 145).

Anodorhynchus Spix.

—Anodorhynchus purpurascens Rothsch. Bull. B. O. C. xvi. p. 13 (1905) (*ex* Don de Navaret, Rel. Voy. Christ. Colombe, ii. p. 425, 1838).

Entirely violet.

Native name of the Caribs, "Onécouli."

Hab. Island of Guadeloupe.

Extinct.

—Anodorhynchus martinicus Rothsch. t. c. p. 14 (1905) (*ex* Père Jacques Bouton, Rel. de l'établiss. d. Français dep. 1635 en l'île Martinique, pp. 71–72, 1640).

Upper surface and head blue, chest and rest of under surface orange.

Hab. Island of Martinique.

Extinct.

Apparently similar to *Ara ararauna*, and possibly identical.

Ara Cuv.

—Ara ararauna (Linn.); Sclat. Bull. B. O. C. iv. p. vi (eggs) (1894); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 24 (Ecuador) (1900).

Anodorhynchus cæruleus (Gm.); Rothsch. Bull. B. O. C. xvi. p. 15 (1905) (Jamaica!).

I do not quite understand why Mr. Rothschild considers *Psittacus cæruleus* Gm. distinct from *Ara ararauna* Linn., and still less why he makes it belong to the genus *Anodorhynchus*.

According to Mr. Clark ('Auk,' 1905, pp. 345, 346) it is very doubtful whether *Ara ararauna* ever lived in Jamaica.

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* Continued from p. 333.

Ara macao (Linn.); Salvad. & Festa, Boll. Mus. Tor. no. 339, p. 9 (1899); Berl. & Hartert, Nov. Zool. ix. p. 107 (Orinoco Region) (1902).

Ara macao ♂ × *Ara militaris* ♀ Martorelli, Atti Soc. Ital. Sc. Nat. xxxv. p. 183 (1895) (in confinement).

Hybrids between two species of Aras are, I think, mentioned by Prof. Martorelli for the first time.

Ara guadeloupensis Clark, Auk, 1905, pp. 272, 348 (1905); Rothsch. Bull. B. O. C. xvi. p. 15 (Dominica) (1905).

Ara, Dutertre, Hist. Gén. des Isles des Christophie, de la Guadel., de la Martin. etc. p. 294 (1654); Hist. gén. des Antill. etc. ii. p. 247 (1667); Anon., Hist. nat. et Mor. des Isles Antill. p. 154 (1658), 2nd ed. p. 170 (1665); Labat, Nouv. Voy. aux Isles de l'Amér. etc. ii. p. 211 (1742); Buff. Hist. Nat. Ois. vi. p. 181 (1774) (part.).

Apparently similar to *A. macao* Linn., but smaller (tail 15 to 20 in. long (Labat), 18 in. long (Dutertre)), and with the tail wholly red.

Hab. Guadeloupe, Dominica (?), Martinique.

Extinct.

Ara chloroptera G. R. Gr.

Ara chloroptera major Bertoni, Aves Nuevas del Paraguay, p. 52 (1901); Arribalzaga, Ann. Mus Nac. de B. Aires, vii. p. 344 (1902) (=*A. chloroptera* typica).

Ara tricolor (Bechst.); Forbes & Robins. Bull. Liverp. Mus. i. no. 1, p. 10 (1897); Clark, Auk, 1905, pp. 347, 348 (extinct); Rothsch. Bull. B. O. C. xvi. p. 15 (1905) (extinct).

It appears that in Cuba this bird survived until very recently. Two specimens are in the British Museum and one in the Liverpool Museum. This Ara, or another allied species, seems to have lived in Jamaica and Haiti.

Ara erythrocephala Rothsch. Bull. B. O. C. xvi. p. 14 (1905) (*ex* Gosse, B. Jamaica, pp. 261, 262).

Head red, rest of body bright green. Wings and greater coverts blue. Tail above scarlet and blue, under side of tail and wings intense orange-yellow.

Hab. Mountains of Trelawny and St. Anne's, Jamaica.

Procured by Mr. White, proprietor of the Oxford Estate.

Extinct.

ARA GOSSEI Rothsch. Bull. B. O. C. xvi. p. 14 (1905) (*ex* Gosse, B. Jamaica, p. 260).

Ara tricolor part., Clark, Auk, 1905, p. 348 (Jamaica).

Forehead, crown, and back of neck bright yellow; sides of face, anterior and lateral parts of neck and back bright scarlet; wing-coverts and breast deep blood-red; winglet and primaries light blue; tail red and yellow. Basal half of the upper mandible black, apical half ash-coloured; lower mandible black, tip only ash-coloured. Legs and feet said to have been black.

Hab. Mountains of Hanover Parish, about ten miles east of Lucea, Jamaica.

Specimen shot about 1765 by Mr. Odell (*Gosse*).

An allied species appears to have lived on Haiti (Clark, Auk, 1905, p. 348; Rothsch. Bull. B. O. C. xvi. pp. 14, 15).

ARA MILITARIS (Linn.); Sclat. Bull. B. O. C. iv. p. vi (eggs) (1894).

ARA RUBRIGENA (Lafresn.).

Ara bridgesi Fraser MSS. in the published Catalogue of Birds in the Knowsley Museum, fide Forbes & Robins. Bull. Liverp. Mus. i. no. 1, p. 10 (1897).

ARA SEVERA (Linn.); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 24 (Rio Peripa) (1900); Berl. & Hartert, Nov. Zool. ix. p. 107 (Orinoco Region) (1902).

ARA AURICOLLIS Cass.; Sclat. Bull. B. O. C. iii. p. xlv (Argentina) (1894); Salvad. Boll. Mus. Tor. no. 292, p. 26 (Argentina, Prov. of Jujuy) (1897), no. 378, p. 11 (Urucum, Matto Grosso) (1900).

ARA HAHNI (Souancé); Berl. & Hartert, Nov. Zool. ix. p. 107 (Orinoco Region) (1902).

Conurus Kuhl.

Conurus acuticaudatus (Vieill.); Salvad. Boll. Mus. Tor. no. 292, p. 26 (Campo Santo, Salta) (1897).

Conurus hæmorrhous (Spix); Berl. & Hartert, Nov. Zool. ix. p. 107 (Orinoco Region) (1902).

Conurus nenday (Vieill.); Salvad. Boll. Mus. Tor. no. 378, p. 11 (Matto Grosso) (1900).

Conurus weddelli Deville; Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 24 (Rio Santiago, Ecuador or.) (1900).

Conurus mitratus Tsch.; Salvad. Boll. Mus. Tor. no. 292, p. 27 (Tala, Salta) (1897).

Conurus rubrolarvatus Mass. et Souancé; Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 24 (Vinces, Rio Peripa) (1900).

Conurus labati Rothsch. Bull. B. O. C. xvi. p. 13 (1905) (*ex* Labat, Voy. aux Isles de l'Amér. ii. p. 218, 1742).

About the size of a Blackbird. Entirely green, except for a small patch of red on the crown; bill white.

Hab. Island of Guadeloupe.

Extinct.

+ Conurus finschi Salv.; Salvad. & Festa, Boll. Mus. Tor. no. 339, p. 9 (1899).

Conurus leucophthalmus (Müll.); Salvad. Boll. Mus. Tor. no. 292, p. 27 (Caiza, Bolivian Chaco) (1897).

Conurus callogenys Salvad.; Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 25 (Ecuador or.) (1900).

I do not see any reason to alter my opinion about this species, notwithstanding the doubts thrown on it by Dr. Forbes and Mr. Robinson (Bull. Liverp. Mus. i. no. 1, pp. 10–11). The larger size of all specimens from Ecuador and the constant red patches on the lower part of the cheeks in adult birds are sufficient characters to recognise this form as distinct from *C. leucophthalmus*, of which I have never seen an authentic specimen from Eastern Ecuador.

— Conurus maugei (Souancé); Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

Conurus chloropterus Cory (nec Souancé), Auk, ix. p. 228 (Mona Isl.) (1892); Sharpe, Hand-list, ii. p. 15, n. 15 (1900).

Mr. Cory attributes to *C. chloropterus* a specimen procured in the Island of Mona by Mr. Brown, and expresses the opinion that *C. gundlachi* Cab. from Mona is inseparable from the San Domingo bird (*C. chloropterus*). This statement is quite against the evidence, as *C. gundlachi* (=*maugei*) has the whole of the under wing-coverts, greater and smaller, red, while the same feathers are green in *C. chloropterus*! I imagine that Brown's bird from Mona is a young specimen, and that the green under wing-coverts are a sign of immaturity.

— Conurus rubritorques Sclat. P. Z. S. 1886, p. 539, pl. lvi.; Cab. J. f. O. 1888, p. 100; Salv. & Godm. Ibis, 1892, p. 328 (Nicaragua); Salvad. Bull. B. O. C. i. p. xi (1892); id. Ibis, 1893, p. 122; Sclat. List Vert. An. 9th ed. p. 339 (1896); Dub. Syn. Av. p. 12, n. 150 (1899); Sharpe, Hand-list, ii. p. 13, n. 20 (1900).

Conurus holochlorus part., Salvad. Cat. B. xx. p. 189 (1891).

Similar to *C. holochlorus*, but having the throat and a few feathers on the sides of the neck, adjoining the throat, red; these feathers form an incipient collar; eye-region naked; bill and feet whitish. Total length 11·5 inches; wing 5·0; tail 4·7.

Hab. Nicaragua.

In the Catalogue of the British Museum I united this species with *C. holochlorus*, but after the inspection of a series of ten specimens collected by Mr. W. B. Richardson in Nicaragua, Messrs. Salvin & Godman recognised that it was distinct from *C. holochlorus*. I have already expressed my agreement with this. The red feathers on the sides of the neck are not present in every individual; the want of them appears to be a sign of immaturity.

— Conurus æruginosus (Linn.); Sharpe, Hand-list, ii. p. 15, n. 25 (1900); Berl. & Hartert, Nov. Zool. ix. p. 107 (Orinoco Región) (1902).

Conurus æruginosus var. *chrysophrys* (Sw.); Dub. Syn. Av. p. 12 (1899).

I do not know Dubois's reasons for keeping *C. chrysophrys* distinct from *C. æruginosus*. The specimen from the Massena Collection, now in the British Museum, which Souancé (Icon. Perr. pl. xi.) figured under the name of *C. chrysophrys*, does not appear to me different from typical *C. æruginosus*.

Conurus arubensis Hartert, Bull. B. O. C. i. p. xvi (Aruba I.) (1892); id. Ibis, 1893, p. 300; Sharpe, Hand-list, ii. p. 16, n. 26 (1900).

Conurus æruginosus var. *arubensis* Dub. Syn. Av. p. 12 (1899).

Adult male and female. Forehead pale yellow for about 0·3 inch; top of the head distinctly tinged with blue; circle round the eyes very narrow above, broader below, pale orange-yellow; lores, cheeks, and sides of the head mixed light brown and very pale orange-yellow, the feathers, especially those on the ear-coverts, being yellowish in the middle and bordered with brown. Of the same size as *Conurus æruginosus*, but with the tail longer as a rule. Total length 9·7 inches, wing 5·45–5·1, tail 4·9–5·1, culmen 0·95–0·78, tarsus 0·5.

Hab. Aruba Island.

"This form of *Conurus* is closely allied to *C. æruginosus* from Guiana and Venezuela, from which it differs only in the lighter colour of the forehead, sides of the head, and throat, and I believe also in a somewhat longer tail." (*Hartert.*)

Conurus pertinax (Linn.); Salvad. Cat. B. xx. p. 197 (1891) (part. et syn. emend.); Berl. J. f. O. 1892, pp. 71, 88 (Curaçao); Peters, ibid. p. 112 (Curaçao); Hartert, Ibis, 1893, p. 320 (Curaçao); Sharpe, Hand-list, ii. p. 16, n. 28 (1900).

Graf von Berlepsch has expressed the opinion that this bird may have been introduced into St. Thomas.

+ CONURUS XANTHOGENIUS Bp. Consp. Av. i. p. 1 (1850) (Brazil!); id. Rev. et Mag de Zool. 1854, p. 150, n. 25; id. Naumannia, 1856, Consp. Psitt. n. 63; Schleg. Dierent. p. 81 (1864); id. Mus. P.-B. *Psittaci*, p. 18 (1864); id. Ned. Tijdschr. Dierk. iii. p. 187 (1866); Sclat. et Salv. Nomencl. Av. Neotrop. p. 112, n. 23 (1873); Hartert, Ibis, 1893, p. 331 (Bonaire I.); Sharpe, Hand-list, ii. p. 16, n. 29 (1900).

Conurus pertinax part., Finsch, Die Papag. i. p. 506 (1867); Salvad. Cat. B. xx. p. 197 (pt.) (1891); Dub. Syn. Av. p. 12, n. 155 (1899).

"Similar to *C. pertinax*, except that in adult specimens the *entire top of the head is of a beautiful golden-yellow colour*, somewhat more orange on the forehead; while in *C. pertinax* the *forehead only is orange-yellow*. . . . . Total length about 10 inches, wing 5·5 to 5·8, tail 5 to 5·5, culmen 0·9 to 1·06." (*Hartert.*)

Hab. Island of Bonaire, W.I.

We owe to Dr. Hartert the discrimination between this species and the allied *C. pertinax*, and also the discovery of its true *habitat*.

CONUROPSIS Salvad. (Cat. B. xx. p. 203, 1891).

The American ornithologists ('Auk,' 1894, p. 49) refuse to accept my genus *Conuropsis* with *C. carolinensis* as type, as they consider the latter to be the type of the genus *Conurus*; but for this purpose they attribute the genus *Conurus* to Lesson (1831) instead of Kuhl (1820).

+ CONUROPSIS CAROLINENSIS (Linn.); Forbes & Robins. Bull. Liverp. Mus. i. p. 11 (1897); Meyer, Vögel-Skel., Lief. xxiii. taf. ccxxvi (1898); Sharpe, Hand-list, ii. p. 16 (1900).

Conurus carolinensis Hasbrouck, Auk, viii. pp. 369–379 (1891)*; Butler, Auk, ix. pp. 49–56 (1892)†; Merriam, ibid. p. 301 (1892); Bendire, Life-Hist. N. Am. B. pl. i. f. 1 (egg) (1895); Nowotny, Auk, xv. pp. 28–32 (1898) *.

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* "The Caroline Paroquet (*Conurus carolinensis*)."

† "Notes on the Range and Habits of the Carolina Parrakeet."

LEPTOPSITTACA Berl. & Stolzm.

Leptopsittaca Berl. & Stolzm. Ibis, 1894, p. 402 .... Type: *L. branickii.*

Leptopsittace Forb. & Robins. Bull. Liverp. Mus. i. n. 1, p. 12 (1897).

Leptopsittaca genus novum Psittacorum, generi *Conuro* affinis, differt spatio latiore ante- et suboculari nudo, necnon remigis quarti apice integro.

LEPTOPSITTACA BRANICKII Berl. & Stolzm. Ibis, 1894, p. 402, pl. xi.; Dub. Syn. Av. p. 12, n. 157 (1899); Sharpe, Hand-list, ii. p. 16 (1900).

"Species magnitudine et forma fere *Conuri leucophthalmi*, sed alis caudaque paulo longioribus et rostro debiliore et breviore. Spatio latissimo ante- et suboculari margineque angusto frontali regione nasali inclusa nudis. Corpore toto obscure viridi, subtus pallidiore; regione lorali striaque angusta hinc inde sub spatio nudo oculari ad tectrices auriculares ducto tectricibusque auricularibus superioribus elongatis, fasciculum formantibus, splendide aureis, loris obscurioribus brunneo-aureis; margine frontali angustissimo obscure aureo-brunneo; pileo anteriore interdum cæruleo tincto; abdomine medio cum corpore laterali tectricibusque subalaribus posterioribus flavo-olivaceis, hoc (!) maculis aurantio-rubris variegato. Rectricibus (duabus mediis exceptis) in pogonio interno sordide flavescenti-rubris, remige primo tectricibusque primariorum superioribus obscure cæruleo marginatis. Rostro pallide corneo, dimidio apicali albescente; pedibus corneis. ♂. Long. tot. 342–340, al. 187–184, caud. 197–192, culm. 26·75, tarsi 19 mm. ♀. Long. tot. 360–341, al. 185–179, caud. 195–182, culm. 27·5–25·75, tars. 19–18·5 mm.

"*Hab.* in Peruvia alta centrali, ad alt. 10,000 ad 13,000 pedum." (*Berlepsch & Stolzman.*)

This quite distinct species has a certain likeness to *Gnathopsittaca icterotis*, but, on account of the colouring of the tail, it appears to me more nearly related to *Conurus acuticaudatus* and *C. hæmorrhous*, and I think that the convenience of separating it generically ought to be reconsidered.

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* "The Breeding of the Carolina Paroquet in Captivity."

MICROSITTACE Bp.

MICROSITTACE FERRUGINEA (Müll.); Salvad. Ann. Mus. Civ. Gen. (2) xx. p. 612 (1900).

Conurus patagonicus Vincig. (nec Vieill.) Rel. Prelim. p. 26 (Punta Arenas, Usunuaia) (1883).

Conurus patagonus Vincig. (nec Vieill.) Boll. Soc. Geogr. Ital. (2) ix. p. 797 (1884).

Conurus smaragdinus (Gm.); Vincig. Boll. Soc. Geogr. Ital. (2) ix. p. 197 (1884); Oust. Miss. Sc. Cap Horn, Ois. p. 4 (1891).

PYRRHURA Bp.

This genus has been the subject of several papers of mine; the last of them ('Ibis,' 1900, pp. 667–673) contains a revision of the species, four of which were additional to those included in the 'Catalogue of Birds.'

PYRRHURA VITTATA (Shaw); Salvad. Cat. B. xx. p. 214 (part.) (1891); Forb. & Robins. Bull. Liverp. Mus. i. p. 12 (1897); Dub. Syn. Av. i. p. 13, n. 161 (1899); Sharpe, Hand-list, ii. p. 17, n. 2 (1900); Salvad. Ibis, 1900, p. 669.

Hab. Eastern Brazil.

PYRRHURA CHIRIPEPÉ (Vieill.); Salvad. Cat. B. xx. p. 608 (species dubia 20) (1891); id. Boll. Mus. Tor. no. 190, pp. 3–4 (Villa Rica, Paraguay) (1894), no. 208, pp. 1–2 (1895); id. Ibis, 1900, p. 610; Sharpe, Hand-list, ii. p. 17, n. 3 (1900).

Pyrrhura vittata, part., Salvad. Cat. B. xx. p. 214 (1891) (Paraguay); Kerr (nec Shaw), Ibis, 1892, p. 140 (Lower Pilcomayo).

Pyrrhura vittata var. *chiripepé* Dub. Syn. Av. p. 13 (1899).

Pyrrhura vittata chiripepé Ihering, Rev. Mus. Paul. vi. p. 335, n. 304 (1904).

Similar to *P. vittata*, but having the tail entirely olive-green above, with no brown-red whatever.

Hab. Paraguay and Rio Grande do Sul.

Pyrrhura borellii Salvad. Boll. Mus. Tor. no. 190, pp. 3–4 (1894), no. 238, p. 18 (1895); Forb. & Robins. Bull. Liverp. Mus. i. p. 12 (1897); Dub. Syn. Av. p. 13, no. 164 (1899); Sharpe, Hand-list, ii. p. 17, n. 4 (1900); Salvad. Ibis, 1900, p. 671; Ihering, Rev. Mus. Paul. vi. p. 335, n. 305 (1904).

Similar to *P. chiripepé* (Vieill.), but with the wings along the cubital and carpal edges red, the fore-neck and breast darker olive-brown, and the primaries with primary-coverts brighter blue.

Hab. Upper Paraguay on the Rio Apa. In the 'Hand-list' instead of Rio Apa is printed Rio Agre!

Pyrrhura emma (Verr.); Salvad. Boll. Mus. Tor. no. 190, p. 4 (1894); Forb. & Robins. Bull. Liverp. Mus. i. p. 12 (1898); Dub. Syn. Av. p. 13, n. 164 (1899); Sharpe, Hand-list, ii. p. 17, n. 6 (1900).

Pyrrhura vittata, part., Tristr. Cat. Coll. B. p. 79, specim. *b* (Guiana) (1889).

I have already remarked (*l. c.*) that this species was named by Jules Verreaux from specimens contained in the collections of Dr. Sclater and Salvin & Godman. I described it for the first time, taking the characters from the same specimens, which have now passed into the British Museum.

Pyrrhura griseipectus Salvad. Ibis, 1900, p. 672; Dub. Syn. Av. p. 1053 (1903).

Pyrrhura leucotis Rchnw. (nec Kuhl), Vogelbild. t. xxviii. f. 8 (1878–83); id. Journ. f. Orn. 1881, p. 338 (Consp. Psitt. p. 178); Salvad. Cat. B. xv. p. 216 (part.) (1891).

This species (the exact locality of which is not certain) belongs to the section of the genus *Pyrrhura* having a brown-red patch on the lower back, the breast with transverse bars, the cheeks maroon, and the bend of the wing red. It is allied both to *P. leucotis* (Kuhl) and *P. emma*

Salvad. ex Verr., but is easily distinguished from both by the feathers of the throat and upper breast being pure grey edged with whitish, with no tinge whatever of green or bluish colour; moreover, the grey breast is sharply defined from the green below, and there is no bluish tinge whatever on the forehead.

PYRRHURA PICTA (P. L. S. Müll.); Berl. & Hartert, Nov. Zool. ix. p. 108 (Orinoco Region) (1902).

PYRRHURA HYPOXANTHA Salvad. Boll. Mus. Tor. xiv. no. 363, p. 1 (Matto Grosso) (1899); Sharpe, Hand-list, ii. p. 17, n. 16 (1900); Salvad. Boll. Mus. Tor. xv. no. 378, p. 12 (1900); id. Ibis, 1900, p. 671, pl. xiv.; Dub. Syn. Av. p. 1053 (1903).

Upper parts mostly green, crown brown, hind-neck tinged with blue; cheeks green, with the feathers edged with yellowish; hidden edges of the feathers of the rump yellow; upper tail-coverts green, with the inner web yellow, tinged with red; throat and fore-neck whitish, the latter tinged with pale rose-colour, gradually changing into the yellow colour of the lower parts; middle of the abdomen bright red; the feathers of the breast, abdomen, and thighs edged with green; under tail-coverts blue, yellow at the base; wings green, primaries and their coverts blue, tips of the quills blackish; outer web of the first quill white towards the base; under wing-coverts yellow; carpal edge green; tail red, inclining to rose-colour at the base; bill and feet dark grey; iris chestnut; naked space round the eyes whitish. Total length about 280 mm., wing 135, tail 140, culmen 19, tarsus 11.

Hab. Matto Grosso, near Urucum.

This species, one of the most beautiful of the genus, is easily recognised by the yellow colour of the sides of the body and thighs. Besides the two typical specimens, both females, Dr. Borelli has obtained a third from a correspondent; this is now in the British Museum; of the two typical specimens, one is in the Zoological Museum of

Turin, the other in Tring Museum. No other examples have been procured as yet.

PYRRHURA MOLINÆ (Mass. & Souancé); Salvad. Boll. Mus. Tor. no. 292, p. 27 (San Francisco, Caiza, San Lorenzo) (1897); no. 378, p. 12 (Matto Grosso) (1900); Sharpe, Hand-list, ii. p. 17, n. 15 (1900).

PYRRHURA PERLATA (Spix); Hellm. Nov. Zool. xii. p. 301 (Para) (1905).

Mr. Hellmayr notices some differences between specimens from Para and Spix's types.

MYIOPSITTACUS Bp.

MYIOPSITTACUS MONACHUS (Bodd.); Salvad. Boll. Mus. Tor. no. 378, p. 12 (Matto Grosso) (1900); Rawnsley, Zoologist, 1903, pp. 1–4 (breeding in New Forest).

BOLBORHYNCHUS Bp.

BOLBORHYNCHUS AYMARA (d'Orb.); Salvad. Boll. Mus. Tor. no. 292, p. 21 (Cara-huassi, Salta) (1897).

PSITTACULA Cuv.

The species of this genus seem to require revision with the help of a series larger than I had in the British Museum.

PSITTACULA CŒLESTIS (Less.); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 25 (Ecuador occ.) (1900).

— PSITTACULA XANTHOPS Salv. Nov. Zool. ii. p. 19, pl. ii. f. 2 (Peru) (1895); Baron, op. cit. iv. p. 6 (Vina, Marañon) (1897); Dub. Syn. Av. p. 15, n. 187 (1899); Sharpe, Hand-list, ii. p. 18, n. 2 (1900).

"Capite summo antico, genis et gutture flavis, nucha, cervice postica, interscapulio, scapularibus et tectricibus alarum minoribus sordide viridibus; dorso imo et tectricibus supracaudalibus cobaltino-cyaneis; corpore subtus viridi-flavo, pectoris lateribus, hypochondriis et tectricibus subcaudalibus viridescentioribus, alis fuscis, extrorsus viridi-limbatis; tectricibus alarum majoribus et mediis cyaneis, his pallidioribus, subalaribus dorso concoloribus; cauda viridi; rostri maxilla fusca, apice et mandibula pallidis; pedibus carneis. Long tot. circa 5·4, alæ 3 5, caudæ 1·65.

"*Fœmina.* Mari similis, alis colore cæruleo haud ornatis, dorso imo quoque multo pallidiore.

"*Hab.* Vina, Huamachuco (5500 feet), N. Peru." (*Hartert.*)

The nearest ally of this species is *P. cœlestis*, but it is much larger and has a larger bill; the head and cheeks are much yellower, and there is hardly any blue behind the eye and at the back of the neck.

PSITTACULA CONSPICILLATA Lafr.; Forb. & Robins. Bull. Liverp. Mus. i. p. 13 (Bolanos, Mexico) (1897).

The locality Bolanos (Mexico) must be a mistake, *P. conspicillata* being, apparently, confined to Colombia.

PSITTACULA MODESTA Cab.; Sharpe, Hand-list, ii. p. 18, n. 5 (1900); Allen, Auk, xx. p. 213 (Guiana) (1903)[*].

PSITTACULA SCLATERI G. R. Gr.; Dub. Syn. Av. p. 15, n. 189 (1899); Berl. & Hartert, Nov. Zool. ix. p. 108 (La Union on the Cauca River, Venezuela); Allen, Auk, xx. p. 213 (1903).

Psittacula modesta sclateri Allen, l. c.

In the 'Catalogue of Birds' I mentioned *Psittacula modesta* Cab., saying that I had not been able to identify it with certainty, but I duly expressed the opinion of Salvin and Graf von Berlepsch that *P. modesta* and *P. sclateri* were probably one and the same species. Mr. Allen, while agreeing "that the two forms are specifically the same," is inclined to recognise the Andean form (*P. sclateri*) as separable from the Guiana form. After having compared a specimen from the Saramaca River, Dutch Guiana, with a male of *P. sclateri*, labelled Rio Javarri, he says that "the Guiana bird differs in being of a lighter, more yellowish-green below, particularly on the breast, and in the rump being of a brighter shade of ultramarine."

These differences seem very small indeed.

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[*] "Note on *Psittacula modesta* Cabanis."

Psittacula passerina (Linn.); Forb. & Robins. Bull. Liverp. Mus. i. p. 13 (1897).

The locality Bolanos (Mexico) is wrongly attributed by Dr. Forbes and Mr. Robinson to some specimens of this species in the Liverpool Museum.

Psittacula flavescens Salvad.; Sharpe, Hand-list, ii. p. 19, n. 8 (1900).

Psittacula passerina var. *flavescens* Dub. Syn. Av. p. 15 (1899).

Psittacula cyanopygia Souancé; Salvad. Cat. B. xx. p. 249 (syn. emend.) (1891); Dub. Syn. Av. p. 15, n. 191 (syn. emend.) (1899); Sharpe, Hand-list, ii. p. 19, n. 9 (1900).

Psittacula insularis Ridgw. Pr. U. S. Nat. Mus. x. p. 541 (Tres Marias) (1887); Nels. U.S. Dept. Agr. no. 14, pp. 41, 42 (1899); Sharpe, Hand-list, ii. p. 19, n. 10 (1900); Dub. Syn. Av. p. 1053 (1903).

Psittacula cyanopygia part., Salvad. Cat. B. xx. p. 249 (1891).

Hab. Tres Marias Islands.

The birds from this locality are a little darker than those from Mexico. They do not appear to me specifically distinct.

Psittacula pallida Brewst.; Sharpe, Hand-list, ii. p. 19, n. 11 (1900).

Psittacula cyanopyga pallida Brewst. Auk, vi. p. 85 (Sonora, Mexico) (1889).

Psittacula cyanopygia part., Salvad. Cat. B. xx. p. 249 (1891).

Psittacula cyanopygia var. *pallida*, Dub. Syn. Av. p. 1053 (1903).

The Sonora bird, which I had united with *P. cyanopygia*, is again separated by Dr. Sharpe.

Psittacula guianensis Sw.; Sharpe, Hand-list, ii. p. 19, n. 14 (1900); Berl. & Hartert, Nov. Zool. ix. p. 108 (Orinoco Region) (1902).

Psittacula deliciosa Ridgw. Pr. U. S. Nat. Mus. x. p. 529 (1887); Sharpe, Hand-list, ii. p. 19, n. 12 (1900); Dub. Syn. Av. p. 1053 (1903).

Psittacula gujanensis part., Salvad. Cat. B. xx. p. 251 (1891).

I had united *P. deliciosa* (of Lower Amazonia) with *P. guianensis*, from which Dr. Sharpe separates it.

Brotogerys Vig.

Brotogerys virescens (Gm.); Schulz, Orn. Monatsber. viii. pp. 56–57 (breeding) (1900).

Brotogerys pyrrhopterus (Lath.); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 25 (Ecuador occ.) (1900).

Brotogerys jugularis (Müll.); Salvad. & Festa, Boll. Mus. Tor. no. 339, p. 9 (1899).

Brotogerys devillei (G. R. Gr.); Berl. & Hartert, Nov. Zool. ix. p. 109 (Orinoco Region) (1902).

Brotogerys chiriri (Vieill.); Allen, Bull. Am. Mus. N. H. v. p. 141 (Chapada) (1893); Salvad. Boll. Mus. Tor. no. 378, p. 12 (Urucum) (1900).

Brotogerys tui (Gm.); Forb. & Robins. Bull. Liverp. Mus. i. p. 13 (1897).

Three specimens, marked females, in the Liverpool Museum have the yellow streak behind the eyes, a feature which I thought peculiar to the males.

[To be continued.]

XXIX.—*On the Birds collected by Mr. Walter Goodfellow on the Volcano of Apo and in its Vicinity, in South-east Mindanao, Philippine Islands.* By W. R. Ogilvie-Grant.

(Plates XVIII. & XIX.)

The present contribution to the ornithology of the Philippine Islands contains an account of an important collection of

Birds recently acquired by the British Museum. It was made by Mr. Walter Goodfellow during the early months of 1905 on the Volcano of Apo and in the neighbouring coast-district of South-east Mindanao.

The late Mr. John Whitehead's memorable visit to the Philippine Archipelago in 1894–1897 added greatly to our knowledge of the avifauna of the northern and central islands, as is shown by his papers in 'The Ibis' *, but he was never able to explore the interior of Mindanao, for when he returned to Manila in February 1899, with that object in view, the Americans had but recently taken over the government of the Philippines from the Spaniards, and it was considered unsafe to travel in the interior of the lawless southern island. Subsequently, as will be remembered, Whitehead visited the island of Hainan and obtained many fine new birds in the Five-Finger Mountains before he was struck down by a malignant fever and died in May 1899 (*cf.* P. Z. S. 1900, pp. 457–504).

It was considered certain by those who had studied the ornithology of the Philippines that Mindanao with its high mountain-ranges must contain many prizes for the traveller who could manage to penetrate to the interior and collect there. Personally I fully expected that the island would yield novelties as fine as those discovered by Whitehead in the highlands of Luzon, but, so far, this does not appear to have been the case; for though many new species have been already discovered, the avifauna of Mindanao is not nearly so remarkable and varied as that of Luzon. Such birds as *Callaeops periophthalmica*, *Pyrrhula leucogenis*, *Loxia luzoniensis*, *Chlorura brunneiventris*, *Chimarrhornis bicolor*, and *Tribura seebohmi*, so far as we are at present aware, are not represented; while *Pitta kochi*, *Ptilopus marchei*, and *Prioniturus montanus* are infinitely finer forms than any which have been found in Mindanao. Again, the genus *Zosterornis* is represented by four species in Luzon, but by only two in Mindanao, while Luzon has produced two species of *Oriolus* (*O. isabellæ* and *O. albiloris*) which have no known representatives in the southern island. It must, however, be remembered that the greater part of the highlands of Mindanao is still untouched.

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* For Part I. see Ibis, 1894, pp. 406–411; Part II. *t. c.* pp. 501–522; Part III. Ibis, 1895, pp. 106–117; Part IV. *t. c.* pp. 249–267; Part V. *t. c.* pp. 433–472; Part VI. Ibis, 1896, pp. 101–128; Part VII. *t. c.* pp. 457–477; Part VIII. *t. c.* pp. 525–565; Part IX. Ibis, 1897, pp. 209–250.

Mr. Goodfellow's first visit to Mindanao was made in 1903, when he landed at Davao on the south-east coast and ascended the Apo Volcano. His journey was undertaken largely with the object of obtaining living examples of new or little-known birds; but he also made a small collection of skins, which subsequently found its way to the Tring Museum, and the novelties of which were described by Dr. Hartert (*cf.* Bull. B. O. C. xiv. no. c. pp. 10–15). This collection proved of such interest that Mr. Rothschild shortly after called the attention of the well-known collector, Mr. Waterstradt, to Mt. Apo, and the latter discovered there several additional new species (*cf.* Bull. B. O. C. xiv. no. cvi. p. 71, and no. cvii. pp. 79, 80).

Meanwhile the Americans had not been idle, and the novelties collected by the various members of the Philippine Scientific Association have been described by Major Mearns [*cf.* Proc. Biol. Soc. Washington, xviii. pp. 1–8, 73, and 83–90 (1905)].

Finally, as already stated, in 1905 Mr. Goodfellow again visited his collecting-ground on the Apo Volcano, and procured a large series of birds, the subject of the present memoir; and though many of the more remarkable species in this collection had been already described by Dr. Hartert, Mr. Rothschild, and Major Mearns, seven additional new species were discovered, viz. :—

Sarcops melanonotus, *Pericrocotus johnstoniæ*, *Rhinomyias goodfellowi*, *Chrysocolaptes montanus*, *Ceyx goodfellowi*, *Pseudoptynx mindanensis*, and *Ptilocolpa mindanensis*.

No less than nineteen species represented in the present collection are new to the British Museum, viz. :—

Lamprocorax todayensis.
Goodfellowia miranda.
Æthopyga boltoni.
Zosterops goodfellowi.
Hyloterpe apoensis.
Turdus kelleri.
Brachypteryx mindanensis.
Pseudotharrhaleus unicolor.
Pericrocotus johnstoniæ.
Stoparola nigriloris.
Rhinomyias goodfellowi.
Rhipidura nigrocinnamomea.
Muscicapula montigena.
Chrysocolaptes montanus.
Ceyx goodfellowi.
Prioniturus waterstradti.
Trichoglossus johnstoniæ.
Pseudoptynx mindanensis.
Ptilocolpa mindanensis.

Among other species of special interest I may call attention to the Javan Ground-Thrush (*Geocichla andromeda*). The unexpected discovery of this species on Mt. Apo indicates a very remarkable extension of the bird's known geographical range. The occurrence of the Philippine Cuckoo-Falcon (*Baza magnirostris*), one of the rarest of the Accipitres, is also worthy of note.

While on his way to Formosa, Mr. Goodfellow was kind enough to write out his field-notes on the species of which he had obtained examples in Mindanao. These notes he posted to me from Ceylon, but the packet was unfortunately lost in the post and has never been recovered.

For the sake of brevity, Messrs. McGregor and Worcester's work, 'A Hand-list of the Birds of the Philippine Islands,' pp. 1–123 (1906), is quoted as "McGregor & Worcester."

The following is a list of the localities in which collections were made:—

Davao, south-east coast of Mindanao.
Daliaon, ,, ,,
Piso, ,, ,,
Mapugba, ,, ,,
Maputi, ,, ,,
Punta Cabatam, south-east coast of Mindanao.
Apo Volcano (7000–8000 ft.), interior of South-east Mindanao.
Taudaya, Apo Volcano (5000 ft.), interior of South-east Mindanao.
Samal Island, off South-east Mindanao.

1. LAMPROCORAX TODAYENSIS.

Lamprocorax todayensis Mearns, Pr. Biol. Soc. Wash. xviii. p. 88 (1905); McGregor & Worcester, p. 109.

a. ♀. Taudaya, 5000 ft., March. No. 302.

"Iris ruby-red; bill and feet black."

Only one adult female example of this small species of Glossy Starling was preserved, as, unfortunately, Mr. Goodfellow did not observe the differences between this bird and the coast form, *L. panayensis,* until he returned to Davao and compared the two.

As in the type specimen of the present species, the throat is more decidedly glossed with violet-purple than it is in *L. panayensis,* while both the bill and the tarsus are considerably shorter and much less robust.

L. todayensis, ♀ adult: total length ca. 6·2 inches; culmen 0·58; wing 3·9; tail 2·45; tarsus 0·8.

L. panayensis, ♀ adult: total length ca. 6·9 inches; culmen 0·7; wing 3·9; tail 2·7; tarsus 0·97.

This form is new to the British Museum.

2. LAMPROCORAX PANAYENSIS.

Lamprocorax panayensis (Scop.); McGregor & Worcester, p. 109.

a–c. ♂ ♀ adult et ♀ imm. Davao, Feb. Nos. 127, 145, 148.

"Iris ruby-red; bill black; feet black, soles whitish."

3. SARCOPS MELANONOTUS.

Sarcops melanonotus Grant, Bull. B. O. C. xvi. p. 100 (1906).

a–e. ♂ ♀. Davao, Feb. and March. Nos. 108, 125, 194, 312, 318.

f. ♂. Piso, April. No. 481.

All the Bald Starlings collected by Mr. Goodfellow in South-east Mindanao belong to the dark-backed form of *Sarcops.* I have already pointed out at some length (*cf.* 'Ibis,' 1895, pp. 258–260; 1896, p. 469) that the grey-backed form is only found west of about long. 122°, while the dark-backed form only occurs to the east of that line.

All the additional material, such as that in the Steere Collection, which has been acquired by the Museum since 1896, goes to prove that my conclusions were correct, and I therefore propose to separate the dark-backed Eastern form under this heading.

In the islands of Marinduque, Guimaras, and Basilan we find birds referable to both forms, some being typical grey-backed *S. calvus*, while others have the back distinctly blackish and approach the typical eastern form.

Adult male and female. Differ from *S. calvus* in having the upper back deep brownish-black.

"Iris brownish-red; bill black; bare skin on head whitish-pink; feet black."

S. calvus (Linn. ex Briss.) was a name given to the grey-backed bird, probably from Manila.

Gymnops griseus Cuv., Meyen, is merely a synonym of the last name.

"*Eulabes tricolor* Müll." [*cf.* Gray, Hand-list Birds, ii. p. 19 (1870)] appears to refer to *Corvus tricolor* Müll. Syst. Nat. Suppl. p. 85 (1776), and, if so, has been referred to *Sarcops* by mistake.

4. GOODFELLOWIA MIRANDA.

Goodfellowia miranda Hartert, Bull. B. O. C. xiv. no. c. p. 11 (1903); McGregor & Worcester, p. 108.

♂ ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 166, 219, 222, 237, 241, 247, 250, 264, 277, 284, 290.

"Iris dark brown, bare skin round eyes yellow; bill yellow, shading into greenish-yellow at the base; toes dirty olive or blackish-olive; legs olive-yellow."

A fine series of Goodfellow's Starling was procured; it is new to the British Museum.

5. DICRURUS STRIATUS.

Dicrurus striatus Tweed.; McGregor & Worcester, p. 107.

a. ♀. Mt. Apo, 7000 ft., March. No. 295.

b–e. ♂ ♀. Piso, March and April. Nos. 322, 329, 341, 476.

f, g. ♂ ♀. Davao, April and May. Nos. 392, 459.

"Iris dark brown; bill and feet black."

6. Oriolus chinensis.

Oriolus chinensis Linn.; McGregor & Worcester, p. 106.

a–f. ♂ ♀ et ♀ imm. Davao, Feb. and March. Nos. 105, 109, 113, 121, 141, 316.

♂. "Iris brown, eyelids pink; bill pink, lighter at the tip; feet bluish-grey; claws pinkish-grey."

♀. "Iris reddish-brown, eyelids purplish-red; bill coral-pink; feet bluish-slate."

♀ *imm.* "Iris deep reddish; bill pinkish-black; feet grey."

Adult females of this Oriole from Luzon, Marinduque, and Catanduanes have the upper parts much yellower than birds from the more southern Philippine Islands, only the lower part of the back being slightly washed with olive. In adult females from Samar, Cebu, Negros, Guimaras, Bohol, Mindanao, and Basilan the entire mantle and back below the yellow nape are strongly washed with olive, in marked contrast with the rump and upper tail-coverts. Though these differences are possibly not of very great importance, it seems worth while to draw attention to them. The males from Luzon &c. are indistinguishable from those found in Mindanao and other southern islands.

In the 'Hand-list of the Birds of the Philippine Islands,' by McGregor and Worcester, I find a footnote by the latter, in which he states that I was mistaken in believing that the type of *O. steeri* came from Negros, and that *O. nigrostriatus* Bourns and Worcester was a synonym of that species. If Mr. Worcester will examine the 'Catalogue of Birds of the Brit. Mus.' iii. p. 213 (1877), he will find there Dr. Sharpe's original description of *O. steerii*, and see that the type, which came from Negros and not from Basilan, is now in the British Museum. Dr. Sharpe, in his description of *O. steerii*, subsequently published in the Trans. Linn. Soc. (2) i. p. 329, *quotes* the 'Catalogue of Birds,' so that the former was obviously published at a later date. The Basilan Oriole, as already pointed out (*cf.* 'Ibis,' 1896, pp. 532, 533), must therefore stand as *O. basilanicus* Grant.

7. Anthus maculatus.

Anthus maculatus Hodgs.; McGregor & Worcester, p. 101.

a, b. ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 189, 256.

The two freshly moulted female examples collected by Mr. Goodfellow near the summit of the Volcano have the upper parts of a brighter olive-green than any specimen to be found among the large series in the British Museum Collection. The dark stripes on the feathers of the back are also unusually distinct. In other respects the Mt. Apo birds agree with typical *A. maculatus,* and are no doubt correctly referred to that species

They measure respectively:—Wing 3·21, tail 2·3 inches; wing 3·2, tail 2·2 inches.

"Iris reddish; bill black, shading into pinkish towards the base; feet and nails pale flesh-coloured."

8. ANTHUS GUSTAVI.

Anthus gustavi Swinh.; McGregor & Worcester, p. 102.

a. ♀. Davao, April. No. 492.

"Iris light brown; upper mandible light brown, lower creamy-white; feet flesh-coloured."

This Pipit has been recorded from most of the islands in the Archipelago.

9. ANTHOTHREPTES CHLOROGASTER.

Anthreptes chlorigaster Sharpe; McGregor & Worcester, p. 100.

a. ♂ imm. Davao, May. No. 461

"Iris deep red; bill dark brown; feet bright olive-green, soles yellow."

10. CINNYRIS JUGULARIS.

Cinnyris jugularis (Linn.); McGregor & Worcester, p. 99.

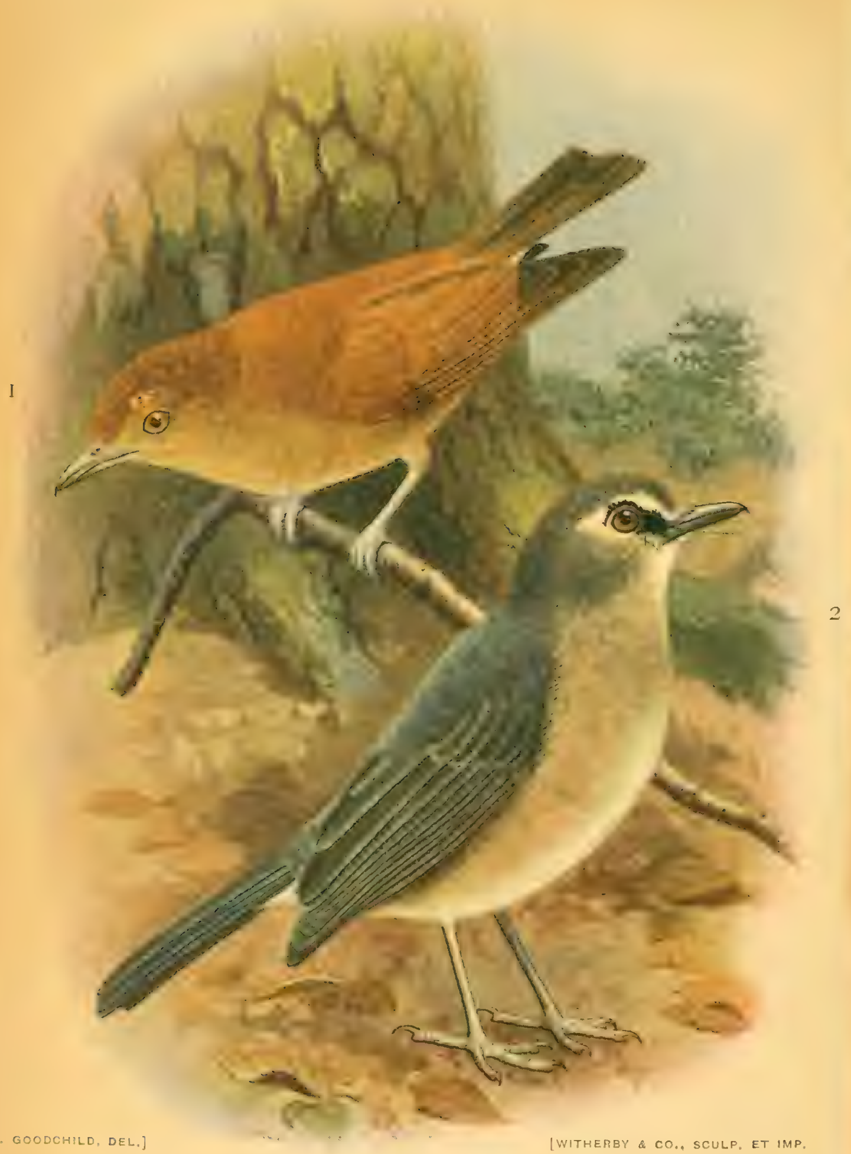
a. ♂. Davao, May. No. 451.

"Iris dark brown; bill and feet black."

11. ÆTHOPYGA BOLTONI.

Æthopyga boltoni Mearns, Pr. Biol. Soc. Washington, xviii. p. 4 (1905); McGregor & Worcester, p. 98.

a, b. ♂. Mt. Apo, 8000 ft., Feb. and March. Nos. 202, 244.



H. GOODCHILD, DEL.] [WITHERBY & CO., SCULP. ET IMP.

1. HYPOCRYPTADIUS CINNAMOMEUS
2. RHINOMYIAS GOODFELLOWI.

"Iris red; bill black; feet black, soles yellowish; nails black."

This beautiful Sun-bird is new to the British Museum.

12. HYPOCRYPTADIUS CINNAMOMEUS. (Plate XVIII. fig. 1.)

Hypocryptadius cinnamomeus Hartert, Bull. B. O. C. xiv. no. c. p. 13 (1903); McGregor & Worcester, p. 96.

a–g. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 177, 178, 183, 186, 187, 230, 299.

"Iris reddish, light brownish-red, or yellowish-red; bill pale greyish-blue at the base, blackish towards the tip; feet pale bluish-grey, soles yellowish."

I agree with Dr. Hartert in placing this very remarkable bird in close proximity to the genus *Zosterops*.

13. ZOSTEROPS GOODFELLOWI.

Zosterops goodfellowi Hartert, Bull. B. O. C. xiv. no. c. p. 13 (1903); McGregor & Worcester, p. 96.

a–d. ♂ ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 176, 182, 184, 271.

"Iris crimson; bill black; feet greyish-olive."

This interesting species, new to the British Museum, appears to belong to the aberrant section of the genus *Zosterops* which lacks the white ring round the eye. In other respects it seems to be most nearly allied to *Z. frontalis* Reichenb. from the mountains of Java.

14. ZOSTEROPS BASILANICA.

Zosterops basilanica Steere; McGregor & Worcester, p. 95.

a, b. ♂ ♀. Taudaya, 5000 ft., March. No. 272.

"Iris pale reddish-gold (in male) or pale brownish-yellow (in female); bill black; feet grey."

15. ZOSTEROPS VULCANI.

Zosterops whiteheadi vulcani Hartert, Bull. B. O. C. xiv. no. c. p. 14 (1903).

Zosterops vulcani McGregor & Worcester, p. 95.

a. ♂. Mt. Apo, 8000 ft., Feb. No. 159.

"Iris pale grey; bill black; feet dark grey."

This form appears to differ from *Z. whiteheadi*, Hartert, in having the breast and belly of a more dusky soiled white. In well made-up skins there is a faint band of yellow down the middle of the breast and belly.

The British Museum contains a series of this species collected by Mr. Waterstradt.

16. DENDROPHILA LILACEA.

Callisitta lilacea (Whitehead); McGregor & Worcester, p. 94.

a–f. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 161, 179, 205, 213, 245, 276.

"Iris bright greenish-yellow, rim of eyelids chrome-yellow, bare skin round the eye and bill greenish-yellow; feet olive-green."

This species is easily recognised from *D. œnochlamys* Sharpe by having the feathers below the eye and the ear-coverts violet instead of blue. This character, which is perhaps the most important difference between the two species, has not been previously noticed.

The two immature specimens of *Dendrophila* procured by Whitehead at Cape Engaño, N.E. coast of Luzon, and referred by me to *D. mesoleuca* (*cf.* 'Ibis,' 1896, p. 119), are probably immature specimens of *D. œnochlamys*, *D. mesoleuca* being confined to the high mountains of East Luzon.

The localities given by McGregor and Worcester, t. c. p. 94, for "*Callisitta œnochlamys*" are incorrect, for the bird found in Leyte, Mindanao, and Basilan is *D. lilacea*.

17. PARUS MINDANENSIS.

Pardaliparus elegans mindanensis Mearns, Pr. Biol. Soc. Washington, xviii. p. 8 (1905).

Pardaliparus mindanensis McGregor & Worcester, p. 94.

a–e. ♂ ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 163, 181, 188, 198, 286.

"Iris black (in the male) or reddish-brown (in the female); bill black; feet pale bluish-grey (in the male) or dark slate (in the female)."

The specimens collected by Mr. Goodfellow bear out the characters attributed to this form by Major Mearns: it appears to be a fairly well-marked subspecies.

18. HYLOTERPE APOENSIS.

Hyloterpe apoensis Mearns, Pr. Biol. Soc. Washington, xviii. p. 86 (1905); McGregor & Worcester, p. 93.

a–c. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 173, 190, 224.

d. ♂. Piso, May. No. 432.

"Iris reddish-brown or dark brown; bill black; feet pale grey or bluish-grey, nails pink."

The type of *H. philippinensis* Walden [*cf.* Ann. & Mag. N. H. (4) x. p. 252 (1872)] was a male procured by Dr. A. B. Meyer in Luzon. Additional examples of this species were obtained by Whitehead on Mt. Arajat, Central Luzon, and in the Province of Albay, in the south-east of that island, in 1893–1894 [*cf.* 'Ibis,' 1894, p. 409, and 1895, p. 254].

In 1896 the British Museum acquired the Steere Collection, which included a series of specimens of *Hyloterpe* from Samar and Basilan, while the Tweeddale Collection contained two examples from Dinagat, collected by A. H. Everett. All these birds differ constantly from the Luzon specimens in having the mantle and back *olive-green* instead of olive-brown, and very closely resemble the birds from Mt. Apo and Piso, S.E. Mindanao, which have recently been described as *H. apoensis*. The only difference between the latter and the birds from Samar &c. appears to be that, as a rule, the crown of the head is rather browner in the Samar birds, and the ear-coverts are of a more rufous tint. These differences, however, are not always constant, for one female specimen in the Steere Collection, from Catbalogan in Samar, has the crown of the head as dark as in the Mindanao birds, and the ear-coverts are but slightly more rufous. Under these circumstances I prefer to include the specimens from Samar, Leyte, Dinagat, and Basilan with those from Mt. Apo, Mindanao, under the title of *H. apoensis*.

The male obtained by Mr. Goodfellow on Mt. Apo at

8000 ft. differs in no way from the male procured by him at Piso on the S.E. coast of Mindanao.

19. Lanius lucionensis.

Otomela lucionensis (Linn.); McGregor & Worcester, p. 92.

a, b. ♂ ♀. Taudaya, 5000 ft., March. Nos. 211, 303.
c. ♂. Mt. Apo, 8000 ft., March. No. 305.

"Iris reddish-brown; bill black, becoming white towards the base of the lower mandible; feet blackish."

20. Megalurus ruficeps.

Megalurus ruficeps Tweedd.; McGregor & Worcester, p. 89.

a. ♂. Daliaon, May. No. 457.

"Iris pale burnt-sienna; upper mandible light brown, lower whitish; feet and nails pale flesh-coloured."

21. Orthotomus frontalis.

Orthotomus frontalis Sharpe; McGregor & Worcester, p. 88.

a. ♂. Daliaon, May. No. 456.

"Iris pale chestnut; upper mandible dark brown, lower flesh-coloured at the base; feet light brownish flesh-coloured."

22. Acrocephalus orientalis.

Acrocephalus orientalis (Temm. & Schl.); McGregor & Worcester, p. 87.

a, b. ○. Banks of Davao River, April. Nos. 386, 402.
c–e. ♂ ♀. Davao, April. Nos. 403, 414, 418.

"Iris pale golden-brown; upper mandible light brown, lower cream-coloured; feet and nails pale bluish-grey."

23. Locustella ochotensis.

Locustella ochotensis (Midd.); McGregor & Worcester, p. 87.

a. ♂. Banks of Davao River, April. No. 398.
b. ♂. Davao, April. No. 406.

"Iris light brown; upper mandible brown, lower creamy-white; feet and nails flesh-coloured or brownish."

24. COPSYCHUS MINDANENSIS.

Copsychus mindanensis (Gmel.); McGregor & Worcester, p. 86.

a, b. ♂. Davao, March and April. Nos. 313, 400.

c, d. ♂ ♀. Piso, May. Nos. 425, 435.

"Iris from very dark brown to black; bill black; feet black, soles yellow."

25. MONTICOLA SOLITARIUS.

Monticola solitaria (P. L. S. Müller); Grant, Ibis, 1894, p. 509.

Petrophila manilla (Bodd.); McGregor & Worcester, p. 85.

a. ♀. Davao, Feb. No. 116.

b, c. ♂. Piso, April. Nos. 335, 474.

"Iris dark brown (in the male) or reddish-brown (in the female); bill black; feet blackish-brown."

26. TURDUS OBSCURUS.

Turdus obscurus (Gmel.); McGregor & Worcester, p. 84.

a, b. ♂. Mt. Apo, 8000 ft., Feb., March. Nos. 152, 216.

"Iris dark reddish-brown; upper mandible black, lower yellowish towards the base; feet dirty yellow, nails light horn-coloured."

27. TURDUS KELLERI.

Merula kelleri Mearns, Pr. Biol. Soc. Washington, xviii. p. 6 (1905); McGregor & Worcester, p. 83.

a–h. ♂ ♀ et ♀ imm. Mt. Apo, 8000 ft., Feb., March. Nos. 150, 162, 165, 172, 203, 214, 292, 298.

"Iris brown; rim of eyelid, bill, feet, and nails yellow."

This Blackbird was represented in the first collection sent home by Mr. Goodfellow in 1903; but Dr. Hartert, having only one adult specimen, refrained from describing it.

It is new to the British Museum.

28. GEOCICHLA ANDROMEDA.

Geocichla andromeda (Temm.); Seebohm, Monogr. Turdidæ, i. p. 77, pl. xxv. (1898).

a, b. ♂. Mt. Apo, 8000 ft., Feb. Nos. 158, 497.

"Iris dark brown; bill black, slightly yellow round the gape; feet and nails ashy pink."

The occurrence of this Ground-Thrush on Mt. Apo is one of the most interesting of Mr. Goodfellow's discoveries. Hitherto it was only known from the mountains of Java, Lombock, and Engaño, for though it was stated by Temminck to be found also on the island of Sumatra, its occurrence there has not been confirmed by recent explorers. It had also been doubtfully recorded from Timor by Schlegel.

The two adult males agree in every particular with adult birds from Java and Lombock.

29. Brachypteryx mindanensis.

Brachypteryx mindanensis Mearns, Pr. Biol. Soc. Washington, xviii. p. 3 (1905); McGregor & Worcester, p. 83.

a. ♂. Taudaya, 5000 ft., March. No. 300.

"Iris, bill, and feet black."

I have somewhat doubtfully referred this specimen (a fully adult male) to *B. mindanensis*, having only one male available for comparison. According to Major Mearns, the Mt. Apo bird is larger than *B. brunneiceps*, Grant, from Negros; but the comparative measurements of our specimens shew the reverse to be the case, the wing of our Mt. Apo bird measuring 2·45 inches against 2·65–2·7 in the Negros bird. The tail (somewhat worn) in our specimen measures 2·0 inches, whereas Major Mearns gives 2·47 as the measurement of the tail in his male of *B. mindanensis*.

He further states that the male type has no trace of grey on the belly, but in our bird, which is perhaps not quite adult, there is a very distinct streak of light smoky-grey down the middle of the belly. It is very unlikely that our male bird should belong to a species different from the type of *B. mindanensis*, which was procured in the same locality, but the description of that species certainly does not agree with it.

30. Macronus mindanensis.

Macronus mindanensis Steere: Grant, Ibis, 1897, p. 231; McGregor & Worcester, p. 82.

a. ♂. Mt. Apo, 8000 ft., March. No. 273.
b, c. ♂. Davao, March, May. Nos. 308, 454.

"Iris pale bluish-grey; bill black; feet ashy-brown or light slate."

The examples of the Hairy-backed Babbler from Davao, on the south-west coast, do not differ from the specimens procured on Mt. Apo at 8000 ft.

31. ZOSTERORNIS CAPITALIS.

Zosterornis capitalis (Tweedd.); Grant, Ibis, 1897, p. 233; McGregor & Worcester, p. 82.

a. ♂. Piso, May. No. 422.
b. ♀. Mapugba River, May. No. 434.

Male. "Iris light bright red; upper mandible dark slate-coloured, lower light slate-coloured; feet light slate-coloured."

Female. "Iris light reddish-gold; upper mandible dark lead-coloured, lower pale lead-coloured; feet pale grey."

These specimens agree well with the type from Dinagat.

32. PSEUDOTHARRHALEUS UNICOLOR.

Pseudotharrhaleus unicolor Hartert, Bull. B. O. C. xiv. no. cvi. p. 74 (1904); McGregor & Worcester, p. 80.

Pseudotharrhaleus griseipectus Mearns, Pr. Biol. Soc. Washington, xviii. p. 2 (1905); McGregor & Worcester, p. 81.

a, b. ♂ ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 153, 255.

"Iris dark brown; bill black; feet and nails rusty-brown (in the male), dull reddish-brown (in the female)."

I have no doubt that *P. griseipectus* Mearns merely represents the adult plumage of *P. unicolor* Hartert; the birds procured by Mr. Goodfellow agree perfectly with Major Mearns's description, and I have compared them with the type of *P. unicolor,* which is undoubtedly in immature plumage. The species is new to the British Museum.

33. PYCNONOTUS GOIAVIER.

Pycnonotus goiavier (Scop.); McGregor & Worcester, p. 80.

a, b. ♂ ♀. Davao, Feb. Nos. 129, 143.

"Iris, bill, and feet black."

34. POLIOLOPHUS UROSTICTUS.

Poliolophus urostictus (Salvad.) ; McGregor & Worcester, p. 79.

a. ♂. Davao, May. No. 443.

"Iris brown, thick fleshy eyelids bright yellow ; bill black ; feet lead-coloured."

35. IOLE PHILIPPENSIS.

Iole philippensis (Gmel.) ; McGregor & Worcester, p. 79.

a–d. ♂. Davao, Feb. Nos. 101, 104, 131, 192.

e. ♂. Piso, April. No. 350.

"Iris brownish-red or dull red; bill black; feet brownish-black."

36. IOLE EVERETTI.

Iole everetti Tweedd. ; Grant, Ibis, 1897, p. 228 ; McGregor & Worcester, p. 79.

a. ♂. Mapugba R., May. No. 426.

"Iris dark red ; bill leaden ; feet pinkish ash-coloured."

37. PERICROCOTUS JOHNSTONIÆ. (Plate XIX.)

Pericrocotus johnstoniæ Grant, Bull. B. O. C. xvi. p. 18 (1905).

a, b. ♂ ♀. Mt. Apo, 7000 ft., March. Nos. 215, 257. (*Types of the species.*)

c, d. ♀ et ♂ imm. Mt. Apo, 7000 ft., March. Nos. 233, 294.

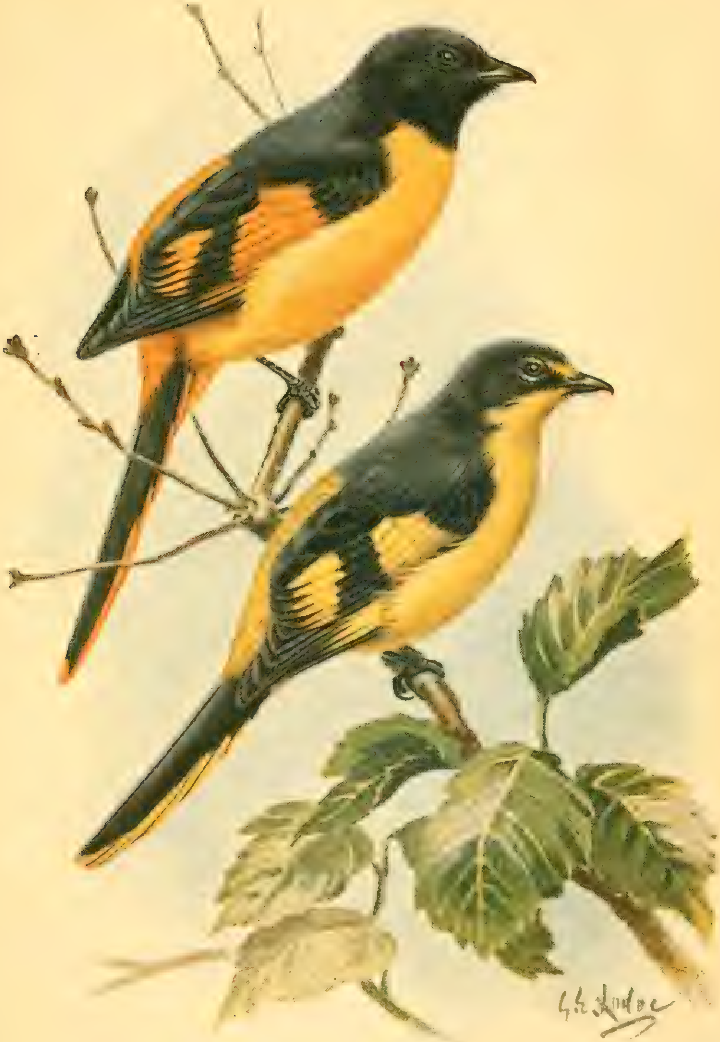
Adult male. Most nearly allied to *P. croceus*, Sharpe, from the south of the Malay Peninsula, but differs in having an oblong orange-yellow mark on the terminal portion of the outer web of the six median secondary quills ; the chin and throat glossy black, like the crown and mantle, and the breast and under parts deep yellow, less tinged with orange. The tail-feathers are black, tipped with orange, increasing in width, so that the outer pairs have the terminal half orange.

"Iris, bill, and feet black."

Total length about 6·5 inches ; wing 3·3 ; tail 3·2 ; tarsus 0·6.

Adult female. Differs considerably from the female of *P. croceus* in having a narrow bright yellow band across the

Ibis. 1906. Pl. XIX.



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WITHERBY & CO., SCULP. ET IMP.

PERICROCOTUS JOHNSTONIÆ, ♂ & ♀.

forehead, continued backwards over the lores in a short superciliary stripe; the chin, throat, and all the yellow parts of the plumage bright yellow instead of orange; and the six median secondary quills with an oblong yellow mark on the terminal half of the outer web.

From the female of *P. leytensis,* Steere, it is easily distinguished by the narrower and much brighter yellow band across the forehead, as well as by the shining blackish grey crown and mantle.

38. ARTAMIDES KOCHI.

Artamides kochi Kutter; McGregor & Worcester, p. 76.

Artamides mindanensis Steere; Grant, Ibis, 1897, p. 224.

a. ♀. Mt. Apo, 8000 ft., March. No. 269.

b–d. ♂ ♀. Davao, March. Nos. 317, 325, 326.

e–i. ♂ ♀. Piso, March, April. Nos. 323, 339, 358, 361, 362.

"Iris pale creamy-white or pale straw-coloured; bill and feet black."

39. STOPAROLA NIGRILORIS.

Stoparola panayensis nigriloris Hartert, Bull. B. O. C. xiv. p. 80 (1904).

Eumyias nigriloris McGregor & Worcester, p. 76.

a–f. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 154, 180, 185, 217, 227, 238.

"Iris reddish-brown; bill and feet black."

The specimens collected by Mr. Goodfellow shew all the characteristics pointed out by Dr. Hartert in his original diagnosis. The species is new to the British Museum.

40. CRYPTOLOPHA MINDANENSIS.

Cryptolopha mindanensis Hartert, Bull. B. O. C. xiv. p. 12 (1903).

This new species was discovered by Mr. Goodfellow during his first expedition to Mt. Apo, but is not represented in the present collection. The unique type, a female, is in the Tring Museum.

41. Rhinomyias ruficauda.

Rhinomyias ruficauda (Sharpe); Grant, Ibis, 1897, p. 225; McGregor & Worcester, p. 75.

a. ♂. Maputi, May. No. 424.

b–d. ♂ ♀. Piso, April and May. Nos. 374, 379, 439.

"Iris dark brown; bill and inside of mouth black; feet ash- or greyish-flesh-coloured."

42. Rhinomyias goodfellowi. (Plate XVIII. fig. 2.)

Rhinomyias goodfellowi Grant, Bull. B. O. C. xvi. p. 17 (1905).

a. ♀. Mt. Apo, 8000 ft., March. No. 235. (*Type of the species.*)

Adult female. General colour above, including the wings and tail, dark slate, shading into dull black on the top of the head and ear-coverts; a narrow white band across the base of the bill, continued over the lores in a narrow superciliary stripe; lores and feathers surrounding the upper eyelid black; chin, throat, middle of breast, belly, and under tail-coverts whitish; chest, sides, and flanks brownish-buff; axillaries, under wing-coverts, and inner edge of quills whitish.

"Iris dark reddish-brown; bill black; feet ashy-grey."

Total length ca. 6·2 inches; culmen 0·85; wing 3·5; tail 2·7; tarsus 0·85.

This fine species appears to be quite distinct from all the members of the genus previously described, being at once recognisable by the dark slate-colour of the upper parts. It is new to the British Museum.

43. Zeocephus cinnamomeus.

Zeocephus cinnamomeus Sharpe; McGregor & Worcester, p. 74.

a. ♀. Piso, May. No. 428.

"Iris very dark brown, rim of eyelids cobalt-blue; bill greyish-cobalt, shading into black at the tip; feet greyish-cobalt."

44. RHIPIDURA NIGRO-CINNAMOMEA.

Rhipidura nigrocinnamomea Hartert, B. O. C. xiv. p. 12 (1903).

a–c. ♂ ♀. Mt. Apo, 8000 ft., Feb. Nos. 119, 201, 204.

"Iris, bill, and feet black."

The male of this remarkably distinct Flycatcher is new to the British Museum. It appears to have no close ally.

45. HYPOTHYMIS SUPERCILIARIS.

Hypothymis superciliaris Sharpe; McGregor & Worcester, p. 73.

a. ♂. Piso, May. No. 433.

"Iris dark brown; bill and feet black."

46. HYPOTHYMIS AZUREA.

Hypothymis azurea (Bodd.); Grant, Ibis, 1897, p. 224.

Hypothymis occipitalis (Vig.); McGregor & Worcester, p. 73.

a. ♂. Davao, April. No. 388.

b. ♂ imm. Piso, March. No. 328.

"Iris black; bill blue, black towards the extreme tip; feet slate-coloured."

47. MUSCICAPULA MONTIGENA.

Muscicapula montigena Mearns, Pr. Biol. Soc. Washington, xviii. p. 8 (1905); McGregor & Worcester, p. 72.

a–c. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 170, 254, 282.

"Iris and bill black; feet shining silver."

This little Flycatcher is closely related to *M. luzoniensis* Grant and *M. nigrorum* Whitehead, but is easily distinguished from the latter by the reddish-olive outer edges of the quills and by the chestnut upper tail-coverts and tail-feathers in the male. This species is new to the British Museum.

48. MUSCICAPULA WESTERMANNI.

Muscicapula westermanni Sharpe; McGregor & Worcester, p. 72.

a. ♂. Mt. Apo, 8000 ft., March. No. 242.

"Iris and bill black; feet shining black."

49. SIPHIA PHILIPPINENSIS.

Siphia philippinensis Sharpe; Grant, Ibis, 1896, p. 464.

Cyornis philippinensis McGregor & Worcester, p. 72.

a–i. ♂ ♀. Davao, Feb. to May. Nos. 111, 117, 321, 385, 394, 450, 453, 455, 458.

"Iris very dark brown; bill black, inside of mouth black; feet and nails reddish slate-coloured, ash-grey, or silvery-grey."

Male examples of the Philippine Red-breasted Flycatcher from Luzon have the rufous of the throat, as a rule, continued right up to the black on the chin. Typical birds from the central islands usually have the top of the throat slightly paler, sometimes inclining to whitish, and in one of the specimens (No. 450) collected by Mr. Goodfellow on the south-east coast of Mindanao the top of the throat is pure white. In an example from Basilan (Steere Coll.) this character is even more marked. I have examined the fine series now available from the various Philippine Islands, but cannot see that it is possible to recognise more than one form. The most that can be said is that in birds from the north the throat is, on the whole, more rufous and uniform in colour, while in those from the central and southern islands the throat is usually a trifle paler above, and sometimes even white.

50. PITTA ERYTHROGASTER.

Pitta erythrogaster Temm.; McGregor & Worcester, p. 68.

a, b. ♂ ♀. Davao, May. Nos. 412, 460.

Male. "Iris dark brown; bill brownish-black; feet ashy-grey."

Female. "Iris sepia-brown; bill black; feet light slate-coloured."

51. THRIPONAX JAVENSIS.

Thriponax javensis (Horsf.); McGregor & Worcester, p. 66.

a. ♂ vix ad. Davao, Feb. No. 130.

b. ♂. Piso, April. No. 338.

♂ *adult.* "Iris red; upper mandible black, lower light slate; feet dull slate-coloured."

♂ *vix adult.* "Iris yellowish cream-coloured; upper mandible black, lower light horn; feet dirty slate-coloured."

The bird from Davao killed in February has the black breast-feathers more or less edged with buff, especially down the middle of the chest; in the male killed at Piso in April only one or two feathers shew traces of buff edgings; both birds appear to be fully adult, so probably these buff edgings are characteristic of the freshly moulted feathers and soon disappear by abrasion.

52. CHRYSOCOLAPTES LUCIDUS.

Chrysocolaptes lucidus (Scop.); McGregor & Worcester, p. 65.

a. ♀ imm. Davao, April. No. 391.

"Iris bright red; upper mandible light greyish-black, lower pale greyish-green."

The immature female from the coast has less red on the wing-coverts and mantle than the adult, but is easily distinguished from *C. montanus* of Mt. Apo.

53. CHRYSOCOLAPTES MONTANUS.

Chrysocolaptes montanus Grant, Bull. B. O. C. xvi. p. 16 (1905).

a–d. ♂ ♀ et ♀ imm. Mt. Apo, 8000 ft., Feb., March. Nos. 160, 210, 212, 275. (*Types of the species.*)

e, f. ♂. Piso, April. Nos. 351, 352.

Adult male and *female* differ from the male and female of *C. lucidus* in having the mantle and wing-coverts orange with scarcely a tinge of crimson. In the female also the top of the head and occipital crest are orange, not washed with crimson.

In the male the "iris is red, the upper mandible black, the lower greenish-yellow, and the feet blackish-grey."

In the female the "iris is ruby-red, the upper mandible black, the lower greenish-yellow, and the feet greyish-olive."

Total length about 9·5 inches; culmen 1·5; wing 5·2; tail 2·9; tarsus 1·1.

In *C. lucidus* the greater part of the wing-coverts and the outer margins of the secondaries are crimson, giving the whole wing a crimson appearance, whereas in the present form, though some of the males have narrow crimson-orange edges to the wing-coverts, the general colour of the wings is distinctly orange.

This form may be regarded as a partially alpine representative of *C. lucidus*, of which it is no doubt a subspecies; it also occurs on the coast, for two fully adult male specimens were procured at Piso, which, according to Mr. Goodfellow's letter, is a locality on the south-east coast of Mindanao, about fifty miles from Davao. From the latter locality, as recorded above, we have received a typical specimen of *C. lucidus*.

This subspecies is new to the British Museum.

54. IYNGIPICUS FULVIFASCIATUS.

Yungipicus fulvifasciatus Hargitt; McGregor & Worcester, p. 65.

a. ♂. Davao, Feb. No. 146.

b, c. ♂ ♀. Mt. Apo, 8000 ft., March. Nos. 270, 274.

d. ♀. Piso, April. No. 359.

"Iris ruby-red; upper mandible black, lower pale slate-coloured at the base; feet olive-grey."

55. XANTHOLÆMA HÆMATOCEPHALA.

Xantholæma hæmatocephalum (P. L. S. Müll.); McGregor & Worcester, p. 64.

a–c. ♂ ♀. Piso, April. Nos. 336, 346, 347.

d. ♂. Davao, April. No. 404.

"Iris brown, eyelids crimson; bill black; feet coral-red, nails black."

56. CENTROPUS MELANOPS.

Centropus melanops Less.; Grant, Ibis, 1897, p. 247; McGregor & Worcester, p. 64.

a. ♀. Piso, April. No. 337.

"Iris ruby-red; bill and feet black."

57. CENTROPUS VIRIDIS.

Centropus viridis (Scop.); Grant, Ibis, 1897, p. 247; McGregor & Worcester, p. 63.

a. ♂. Daliaon, 4th Feb. No. 132.

b–d. ♂ ♀. Davao, Feb., April, May. Nos. 135, 444, 494.

"Iris ruby-red; bill black or slate-coloured; feet black or light slate-coloured."

In the female specimen the under wing-coverts are almost entirely rufous, in the males they are blackish.

58. EUDYNAMIS MINDANENSIS.

Eudynamis mindanensis Linn.; Grant, Ibis, 1897, p. 247; McGregor & Worcester, p. 63.

a–d. ♂ ♀. Davao, April and May. Nos. 405, 407, 463, 491.

"Iris ruby-red; bill pale greenish-grey or very pale yellowish-green; feet light greenish slate-coloured or slate-coloured."

59. CACOMANTIS MERULINUS.

Cacomantis merulinus (Scop.); McGregor & Worcester, p. 62.

a, b. ♂ vix ad. Mt. Apo, 8000 ft., Feb. & March. Nos. 164, 249.

"Iris yellowish-brown, rim of eyelids bright yellow; bill black, greenish-yellow towards the base; feet yellow."

60. PYROTROGON ARDENS.

Pyrotrogon ardens (Temm.); McGregor & Worcester, p. 60.

a–c. ♂ ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 156, 260, 267.

d, e. ♂ ♀. Piso, April. Nos. 357, 382.

f. ♂. Maputi, May. No. 421.

"*Male.* Iris dark brown; bare skin of face bright blue-violet; bill bright leaf-green, shading into bright yellow at the tip; feet bright blue, nails chrome-yellow."

"*Female.* Iris dark brown; bare skin of face bright violet, shading into bright blue about the bill; bill as in male; feet blue, pinkish-mauve or slate-coloured, nails orange."

61. MACROPTERYX COMATA.

Macropteryx comata Tickell; Grant, Ibis, 1895, p. 409; 1896, p. 555.

Macropteryx comata major Hartert, Nov. Zool. iv. p. 11 (1897).

Macropteryx major McGregor & Worcester, p. 58.

a. ♀. Piso, March. No. 327.

"Iris dark brown; bill and feet black."

Dr. Hartert has separated the Tree-Swifts from the Philippine Islands on account of their longer wing-measurements, but the difference does not appear to me to be constant or to warrant this distinction; the wing-measurement varies from 5·0 to 5·55 inches, and in the present instance is 5·1.

62. CAPRIMULGUS MANILLENSIS.

Caprimulgus manillensis Wald.; Grant & Whitehead, Ibis, 1898, p. 246; Oates & Reid, Cat. Birds' Eggs Brit. Mus. iii. p. 68, pl. i. fig. 9 (1903); McGregor & Worcester, p. 57.

a. ♀. Piso, April. No. 343.

"Iris golden; bill black; feet brownish."

Two eggs of this Nightjar procured by Mr. Goodfellow at Piso, S.E. Mindanao, differ considerably from those already described by me from Cape Engaño, N.E. Luzon (*cf.* 'Ibis,' 1898, p. 246). Most of the markings in the present specimens are much smaller, more rounded, and well-defined, some of the surface-markings, especially those round the larger end of one of the eggs, being of a very deep brown. They measure respectively 1·28 by ·85 and 1·2 by ·83 inch.

63. CAPRIMULGUS GRISEATUS.

Caprimulgus griseatus Wald.; Grant & Whitehead, Ibis, 1898, p. 245, pl. vi. fig. 7 (egg); McGregor & Worcester, p. 57.

a. ♂. Punta Cabatam, April. No. 375.

b. ♂. Davao, May. No. 465.

"*Male.* Iris yellow; bill black; feet flesh-coloured."

"*Female.* Iris golden-brown; bill dark brown; feet greyish flesh-coloured."

A clutch of two eggs undoubtedly of this species was taken by Whitehead at Cape Engaño (*cf.* 'Ibis,' 1898, p. 245.

pl. vi. fig. 7). These are of the normal Goatsucker-type, but have the markings unusually pale.

Along with the specimens collected by Mr. Goodfellow there are seven glossy white eggs referred to this species, but they are almost certainly those of a *Merops*, and no doubt some mistake has been made in the identification.

64. BATRACHOSTOMUS SEPTIMUS.

Batrachostomus septimus Tweedd.; McGregor & Worcester, p. 50.

a, b. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 169, 258.

c. ♂. Piso, April. No. 365.

"Iris cinnamon or yellowish-cinnamon, eyelids dirty light brown; bill yellowish at the base, dusky brown towards the tip; feet and nails pale creamy flesh-coloured."

I have now before me eight examples of this species from Mindanao and Basilan, five males and three females; of these, two of the males and all the females may be regarded as belonging to the *rufous phase* of plumage, in which the upper parts are uniformly chestnut and shew very little trace of buff or sandy markings, and the outer webs of the long scapulars are buff or whitish-buff in the males and deep buff or rufous-buff in the females.

In the *lighter phase* of plumage, as shown in two adult males, both the upper and under parts are largely mixed with sandy or whitish-buff vermiculations and transverse bars of buff and black, especially on the top of the head and nape, and the outer webs of the long scapulars are pure white. The eighth example, a male, is intermediate between the two types, combining the rufous phase with white outer webs to the scapulars; while the under parts, especially on the belly, are paler sandy, marked and vermiculated with black.

Males of this species appear to have the black subterminal spot at the end of the scapulars larger and much better defined than the females.

The pair of birds obtained by Mr. Goodfellow near the summit of Mt. Apo are in very complete *rufous* plumage, while the male from Piso is an unusually light example; this naturally led him to suppose that they belonged to different species, which is certainly not the case.

The bird procured at Piso was sitting when shot on a curious pad-like nest formed of spiders' webs and fibre, measuring about three inches in diameter. The nest was fastened to the rib of a palm-leaf.

65. MEROPS BICOLOR.

Merops bicolor Bodd.; Grant, Ibis, 1897, p. 243.

Merops americanus P. L. S. Müller; McGregor & Worcester, p. 56.

a–c. ♂ ♀. Davao, Feb. Nos. 118, 124, 136.

"Iris ruby-red; bill black; feet black or dark grey in the male, light grey in the female."

66. CRANORRHINUS LEUCOCEPHALUS.

Cranorrhinus leucocephalus (Vieill.); McGregor & Worcester, p. 56.

a, b. ♂ et ♂ imm. Davao, March. Nos. 314, 331.

c–e. ♂ ♀. Piso, April. Nos. 380, 384, 485.

"Iris deep red, eyelids orange (in the male) or yellow (in the female); bare skin of face and throat bright vermilion; bill crimson, with black and fawn stripes on the sides of the lower mandible; feet black, soles white."

67. PENELOPIDES AFFINIS.

Penelopides affinis Tweedd.; McGregor & Worcester, p. 56.

a–c. ♂ ♀. Piso, March, April. Nos. 330, 369, 484.

d–i. ♂ ♀ et ♂ imm. Davao, Feb., April. Nos. 100, 334, 408, 468, 487, 490.

"*Male.* Iris deep red; bare skin of face and throat milky-white; bill whitish-horn at the tip, black and dull red at the base; feet blackish-grey or blackish-brown."

"*Female.* Iris deep red; bare skin of face and throat indigo-blue; bill horn-white at the tip, black and red at the base; feet black."

68. HYDROCORAX MINDANENSIS.

Hydrocorax mindanensis (Tweedd.); McGregor & Worcester, p. 55.

a. ♀. Mt. Apo, 7000 ft., March. No. 297.

b–e. ♂ ♀. Davao, April. Nos. 315, 410, 440, 469.

"Iris pale blue; bill deep red at the base, yellow on the intermediate portion, and dark horn-coloured at the tip; feet scarlet or orange-scarlet, nails dark horn-coloured."

69. HALCYON HOMBRONI.

Halcyon hombroni (Bonap.); McGregor & Worcester, p. 55.

a, b. ♂ ♀. Mt. Apo, 8000 ft., March. Nos. 252, 300*a*.

"Iris dark brown; bill bright scarlet, blackish down the ridge of the culmen; feet and nails old-gold-coloured."

70. HALCYON CHLORIS.

Halcyon chloris (Bodd.); McGregor & Worcester, p. 55.

a–d. ♂ ♀. Davao, Feb. Nos. 119, 133, 137, 139.

"Iris brown; bill black, basal half of lower mandible white; feet brownish-black, soles yellowish."

71. HALCYON WINCHELLI.

Halcyon winchelli Sharpe; McGregor & Worcester, p. 54.

a. ♂. Davao, April. No. 396.

"Iris very dark brown; bill black, lower mandible white at the base; feet light olive-green, nails black."

72. HALCYON GULARIS.

Halcyon gularis (Kuhl); McGregor & Worcester, p. 54.

a–g. ♂ ♀. Davao, April. Nos. 395, 420, 445, 470, 478, 480, 483.

"Iris dark brown, rim of eyelids crimson or red; bill dull sealing-wax red, lighter and brighter towards the base; feet vermilion or coral-red, nails black."

73. CEYX MINDANENSIS.

Ceyx mindanensis Steere; McGregor & Worcester, p. 53.

a. ♀. Maputi, May. No. 423.

"Iris dark brown; bill, feet, and nails brightest vermilion."

In spite of what Mr. Worcester has written (*cf.* Occ. Pap. Minnesota Acad. i. no. 1, p. 47 ; and McGregor & Worcester, p. 53) I cannot help thinking that he is mistaken in uniting *C. mindanensis* Steere with *C. basilanica* Steere. The types of these two species are now in the British Museum. As pointed out by Prof. Steere, the latter species lacks the violet and black spot preceding the white spot on the side of the neck, and has much more chestnut on the secondary quills and wing-coverts.

These characters appear to be quite constant, and I consider that *C. basilanica* should be maintained.

74. CEYX GOODFELLOWI.

Ceyx goodfellowi Grant, Bull. B. O. C. xvi. p. 17 (1905).

a. ♂. Piso, May. No. 429. (*Type of the species.*)

Adult male. Most nearly allied to *C. malamaui* Steere, but the back, rump, and upper tail-coverts are of a brilliant ultramarine-blue, tinged with cobalt on the middle of the lower back and rump; the feathers of the crown and nape are also tipped with much the same brilliant colour; the wing-coverts and scapulars, like those of *C. malamaui*, are of a deep purplish-blue.

"Iris dark brown; bill, feet, and nails bright vermilion."

Total length 5·0 inches; culmen 1·55; wing 2·5; tail 0·85; tarsus 0·4.

Messrs. Bourns and Worcester [*cf.* Occ. Pap. Minnesota Acad. i. no. 1, p. 47 (1894)] have united *C. malamaui* Steere with *C. bournsi* Steere, stating that they have a practically unbroken series of specimens between these two very different types. I think that their conclusions may probably require modification, for it would appear that the young of *C. malamaui* has the middle of the lower back and rump *much* lighter than in the adult. Bourns and Worcester write that "in one case where the parent and offspring were killed at one discharge of the gun they exhibited marked differences in colour"—a statement which seems to bear out the theory that the differences in plumage are due to age. A young example of *C. bournsi* has likewise the middle of the lower back and rump silvery-blue, *much* paler than in the adult, which is of a turquoise-blue.

75. ALCYONE ARGENTATA.

Alcyone argentata (Tweedd.); McGregor & Worcester, p. 52.

a. ♀. Mapugba River, May. No. 431.

"Iris very dark brown; bill black, inside of mouth salmon-coloured; feet and nails brightest vermilion."

This example agrees exactly with the type from Dinagat.

76. ALCEDO ISPIDA.

Alcedo ispida Linn.; Grant, Ibis, 1895, p. 261.

Alcedo bengalensis Briss.; McGregor & Worcester, p. 52.

a, b. ♂ ♀. Piso, April. Nos. 364, 373.

c–e. ♂ ♀. Davao, April. Nos. 387, 389, 399.

"*Male.* Iris brown; bill black, dull red at the base; feet coral-red, nails black."

"*Female.* Iris brown; bill black, lower mandible salmon-red; feet vermilion or yellowish coral-red, nails black."

77. PELARGOPSIS GIGANTEA.

Pelargopsis gigantea Walden; McGregor & Worcester, p. 52.

a. ♀. Piso, April. No. 378.

b–d. ♂ ♀. Davao, April, May. Nos. 390, 413, 486.

e, f. ♂ imm. Samal Island, May. Nos. 427, 438.

"Iris dark brown, rim of eyelids red; bill sealing-wax red, shading into blackish at the tip; legs coral-red."

78. EURYSTOMUS ORIENTALIS.

Eurystomus orientalis (Linn.); McGregor & Worcester, p. 51.

a. ♀. Daliaon, 3rd Feb. No. 103.

b–e. ♂ ♀. Davao, Feb. Nos. 126, 128, 142, 195.

"Iris dark brown, eyelids red; bill coral-red tipped with black, gape and inside of mouth yellow; feet coral-red, nails black."

79. LORICULUS APICALIS.

Loriculus apicalis Souancé; McGregor & Worcester, p. 50.

a. ♂. Mt. Apo, 8000 ft., March. No. 301.
b, c. ♂ ♀. Taudaya, 5000 ft., March. No. 304.
d. ♀. Piso, May. No. 332.
e–g. ♂ ♀. Davao, March and May. Nos. 307, 417, 447.

"Iris brown; bill and cere orange-red or scarlet; feet pale orange, nails black."

80. Bolbopsittacus mindanensis.

Bolbopsittacus mindanensis Steere; McGregor & Worcester, p. 49; Grant, Bull. B. O. C. xvi. no. cxviii. p. 17, no. cxix. p. 36 (1905).

a–c. ♂ ♀. Davao, Feb., May. Nos. 144, 448, 466.
d–h. ♂ ♀. Piso, April. Nos. 342, 345, 349, 361, 475.

"*Male.* Iris brownish; bill grey at the base, black towards the tip; feet grey, slightly washed with pale green."

"*Female.* Iris brown; upper mandible grey at the base, shading into darker towards the tip, lower mandible grey; feet grey."

81. Tanygnathus lucionensis.

Tanygnathus lucionensis (Linn.); Grant, Ibis, 1896, p. 561; 1897, p. 248; McGregor & Worcester, p. 49.

a–c. ♂ et ♂ imm. Davao, March. Nos. 120, 306, 310.
d. ♀. Piso, April.

"*Male.* Iris cream-coloured, shading into olive-green near pupil; bill red, yellowish towards the tip; cere black; feet greyish-olive."

"*Female.* Iris pale olive-green, shading into yellowish-cream on the outer ring; upper mandible coral-red, lower of a more yellowish tinge; feet dark greenish slate-coloured."

82. Prioniturus discurus.

Prioniturus discurus Vieill.; Grant, Ibis, 1895, p. 263; 1896, p. 560; 1897, p. 248; McGregor & Worcester, p. 49.

a, b. ♂ ♀. Davao, Feb. Nos. 102, 123.
c–h. ♂ ♀. Piso, April. Nos. 344, 348, 376, 415, 472, 482.

"Iris light brown; bill pale greyish-white or bluish-white; feet grey, sometimes washed with greenish."

Mr. Goodfellow procured three eggs of this species from a hollow tree at Piso. They are of a rounded-oval shape, pure white, and almost devoid of gloss. They measure respectively 1·25 by 1·05 inch, 1·25 by 0·99, and 1·2 by 1·0.

83. PRIONITURUS WATERSTRADTI.

Prioniturus waterstradti Rothschild, Bull. B. O. C. xiv. no. cvi. p. 71 (1904); McGregor & Worcester, p. 49.

a–d. ♂ ♀. Mt. Apo, 8000 ft., March. Nos. 167, 232, 243, 261.

"Iris greyish-brown; bill bluish-white; feet and nails pale bluish-grey."

This interesting species of Racquet-tailed Parrot is new to the British Museum.

84. CACATUA HÆMATUROPYGIA.

Cacatua hæmaturopygia (P. L. S. Müller); McGregor & Worcester, p. 48.

a–c. ♂ ♀. Daliaon, 4th Feb. Nos. 106, 112, 113.

"Iris dark brown (in the male) or red (in the female), bare skin round eyes white or pinkish-white; bill bluish-white."

85. TRICHOGLOSSUS JOHNSTONIÆ.

Trichoglossus johnstoniæ Hartert, Bull. B. O. C. xiv. p. 10 (1903); Goodfellow, Avicult. Mag. (n. s.) iv. p. 83, pl. (1906); McGregor & Worcester, p. 48.

a–d. ♂ ♀. Mt. Apo, 8000 ft., March. Nos. 231, 268, 283, 293 *a*.

"Iris red; bill yellowish-scarlet; cere black; feet grey or pale greenish-grey."

The female appears to have the yellow basal portion of the feathers of the under parts paler yellow than in the male.

An interesting account of Mrs. Johnstone's Parroquet, written by Mr. Goodfellow, will be found in the 'Avicultural Magazine,' as quoted above. A pair of this species living in Mrs. Johnstone's aviary at Burrswood, Sussex, has succeeded in rearing young birds. This species is new to the British Museum.

86. PSEUDOPTYNX MINDANENSIS.

Pseudoptynx mindanensis Grant, Bull. B. O. C. xvi. p. 99 (1906).

a. ♂. Davao, May. No. 467. (*Type of the species.*)

Male adult. Nearly allied to *P. philippensis* (Gray), from which it differs in being somewhat larger and in the following points:—The general colour of the upper parts is much darker, the feathers being brownish black, and rather narrowly margined with sandy rufous, instead of bright tawny-buff; the primary-quills are dark brown, with only faint traces of buff markings; the secondaries similar, with faintly indicated greyish buff transverse markings; the tail-feathers brown, with whitish or whitish buff transverse markings, rather faintly indicated on the outer webs; and the under parts more heavily streaked with blackish. "Iris light brownish gold; bill whitish towards the tip, bluish grey at the base; feet pale grey; nails white at the base, grey at the tip."

P. mindanensis, type, ♂: total length ca. 19·5 inches; culmen 2·0; wing 14·8; tail 7·3; tarsus 3·0.

P. philippensis, ♂ (Benguet District, Luzon, *Whitehead*): total length ca. 19·0 inches; culmen 1·8; wing 13·7; tail 7·1; tarsus 1·6. ♀ (Benguet District, Luzon, *Whitehead*): total length ca. 19·0 inches; culmen 1·9; wing 13·8; tail 6·8; tarsus 2·7.

Of the six examples of *P. philippensis* in the British Museum, Whitehead's specimens, measured above, are the largest.

87. FALCO SEVERUS.

Falco severus Horsf.; McGregor & Worcester, p. 45.

a, b. ♂ ♀. Piso, April. Nos. 360, 363.

c, d. ♀ et ♂ imm. Davao, April. Nos. 397, 401.

"Iris very dark brown; cere and bare skin round eyes deep yellow; upper mandible light slate-coloured at the base, black towards the tip, lower mandible yellowish at the base; feet chrome-yellow, nails black."

Two of the specimens have the colour of the iris marked as yellow; no doubt this is a slip of the pen for brown.

88. MICROHIERAX MERIDIONALIS.

Microhierax meridionalis Grant, Ibis, 1897, p. 220; McGregor & Worcester, p. 44.

a. ♀. Davao, Feb. No. 122.

b, c. ♀. Piso, April. Nos. 371, 383.

"Iris dark brown; bill, cere, and feet black."

The wing-measurements vary from 4·5 to 4·65 inches.

An egg, believed to be that of this species, was taken by Mr. Goodfellow at Piso; he has supplied me with the following note:—"I believe this egg belongs to the Little Falconet (glossy black, with white breast). It was in a hole in the same tree as the Racquet-tailed Parrots, but after cutting down the tree there were so many holes that it was difficult to know which was that of the Falconets', although they flew out when we were cutting through the tree."

There is no reasonable doubt that this egg is correctly identified. It closely resembles the egg of the Burmese Falconet and is of a regular oval shape, devoid of gloss, and of a uniform yellowish-white colour. It measures 1·2 by ·93 inch.

89. BAZA MAGNIROSTRIS.

Baza magnirostris Gray; McGregor & Worcester, p. 44.

a. ♀ vix ad. Davao, Feb. No. 140.

"Iris brown; upper mandible black, lower slate-coloured; feet whitish yellow."

The present example of this rare Cuckoo-Falcon appears to be a younger bird, having all the feathers of the crown and nape reddish buff with dark middles. In the typical specimen in the British Museum these parts are much darker, and the rufous-buff edges are much reduced in width. As in the type-specimen, the under wing-coverts are *uniform pale rufous*. In the Indian species, *B. jerdoni*, the under wing-coverts are white with chestnut tips, giving these parts a spotted appearance, and the chestnut bars on the breast and belly are very wide. It was at one time considered uncertain whether the type-specimen described by G. R. Gray had really come from South Luzon; but there is now no longer any room for doubt in the matter, for McGregor and Worcester (*t. c.*) have also recorded this bird from Mindanao.

90. Pernis cristatus.

Pernis cristatus Cuv.; Grant, Ibis, 1897, p. 213.

Pernis ptilonorhynchus Temm.; McGregor & Worcester, p. 44.

a. ♂. Daliaon, Feb. No. 197.

"Iris yellow; bill black, greyish at the base of the lower mandible; feet chrome-yellow."

The longest crest-feather measures 2·15 inches.

91. Elanus hypoleucus.

Elanus hypoleucus Gould; McGregor & Worcester, p. 44.

a. ♀. Daliaon, May. No. 411.

"Iris orange-red, eyelids yellow; bill black; cere pale lemon-yellow; feet pale yellow, nails black."

92. Haliastur intermedius.

Haliastur intermedius Gurney; McGregor & Worcester, p. 43.

a. ♀. Davao, April. No. 493.

"Iris golden-brown; cere primose-yellow; upper mandible pale yellowish-grey, lower mandible pale grey; feet yellow, nails black."

93. Butastur indicus.

Butastur indicus (Gmel.); McGregor & Worcester, p. 43.

a, b. ♂. Davao, Feb. Nos. 114, 117.

"Iris bright yellow, eyelids chrome-yellow; bill black at the tip, light horn-coloured towards the base; cere and gape deep chrome; feet chrome-yellow."

94. Spilornis holospilus.

Spilornis holospilus (Vig.); Grant, Ibis, 1896, p. 528; McGregor & Worcester, p. 42.

a. Not quite adult. Mt. Apo, 8000 ft., Feb. No. 110.

b, c. Adult et ♂ imm. Davao, March and May. Nos. 311, 441.

d–f. ♀. Piso, March and April. Nos. 324, 356, 381.

"Iris yellow; skin of face yellow; bill grey at the base, black at the tip, greenish about the nostrils; feet yellow."

The immature male from Davao is in an interesting stage of plumage: the chest and upper breast being clad with the chestnut and white-spotted feathers of the adult, while the lower breast and belly are in the white plumage of immaturity, conveying the impression at the first glance that the specimen is a semi-albino. A somewhat older bird from Mt. Apo resembles the adult, but the under wing-coverts are mostly white. As I have already pointed out in the paper quoted above, birds of this species from Mindanao and Basilan are smaller than those from Luzon, and in the present instance the wing-measurements of five specimens vary from 12·7 to 13·2 inches.

95. ACCIPITER MANILLENSIS.

Accipiter manillensis Meyen; Grant, Ibis, 1897, p. 212; McGregor & Worcester, p. 41.

a. ♀. Mt. Apo, 8000 ft., March. No. 221.

"Iris bright yellow, rim of eyelids chrome-yellow; bill slate-coloured at the base, black towards the tip; cere olive-green; feet pale yellow, nails black."

96. ASTUR SOLOENSIS.

Astur soloensis (Lath.); Grant, Ibis, 1896, p. 104; McGregor & Worcestor, p. 41.

a. Adult. S.E. Mindanao. (*Original label lost.*)

97. ASTUR TRIVIRGATUS.

Astur trivirgatus (Temm.); Grant, Ibis, 1897, p. 212; McGregor & Worcester, p. 41.

a. ♀ imm. Davao, Feb. No. 107.

"Iris bright yellow, eyelids greenish-yellow; upper mandible black, lower slate-coloured; cere yellowish-green; feet chrome-yellow."

98. DUPETOR FLAVICOLLIS.

Dupetor flavicollis (Lath.); McGregor & Worcester, p. 36.

a. ♀. Davao, May. No. 416.

"Iris madder-red, with a very narrow inner ring of gold;

upper mandible black, brown along the cutting-edge, lower mandible brown; feet dark brown."

99. ARDETTA SINENSIS.

Ardetta sinensis (Gmel.); McGregor & Worcester, p. 35.

a. ♂. Davao, April. No. 489.

"Iris yellow, shading into cream round the pupil; upper mandible light brown at the base, remainder black, lower mandible and bare skin of the face pale yellowish-green; feet pale yellowish-green, nails pale brown."

100. BUBULCUS COROMANDUS.

Bubulcus coromandus (Bodd.); McGregor & Worcester, p. 35.

a. ♂. Davao, March. No. 319.

"Iris light yellow; bill and bare skin round eyes yellow; legs yellowish, feet greenish-black."

101. BUTORIDES JAVANICA.

Butorides javanica (Horsf.); McGregor & Worcester, p. 34.

a–c. ♂ et ♀ imm. Davao, April, May. Nos. 409, 419, 488.

d. ♂. Piso, April. No. 471.

"Iris yellow; bare skin of the face greenish-yellow; bill black, base of the lower mandible yellowish-green; feet deep yellow, nails light horn-coloured."

102. GARZETTA GARZETTA.

Egretta garzetta (Linn.); McGregor & Worcester, p. 33.

a. ♀. Davao, May. No. 442.

"Iris pale yellow; bare skin of face bright yellow; bill black, base of lower mandible yellow; feet and front of legs black, back of legs and soles pale yellowish-green."

103. DISSURA EPISCOPUS.

Dissura episcopus (Bodd.); Sharpe, Cat. Birds B. M. xxvi. p. 294 (1898).

Dissoura episcopus McGregor & Worcester, p. 31.

a. ♂. Davao, May.

"Iris brown; bill Indian-red, black towards the base; bare skin of the face light slate-coloured; legs and feet Indian-red."

104. Totanus brevipes.

Heteractitis brevipes (Vieill.); McGregor & Worcester, p. 26.

a, b. ♂ ♀. Piso, April. Nos. 353, 377.

"Iris brown; bill black; base of lower mandible and feet yellow-ochre."

105. Numenius variegatus.

Numenius variegatus Scop.; McGregor & Worcester, p. 24.

a. ♂. Piso, April. No. 370.

"Iris brown; bill black, base of lower mandible yellow-ochre; feet grey."

106. Ægialitis dubia.

Ægialitis dubia (Scop.); McGregor & Worcester, p. 23.

a. ♀. Davao, May. No. 452.

"Iris very dark brown, eyelids fleshy and chrome-yellow; bill black, base of lower mandible deep yellow; feet greyish flesh-coloured."

107. Larus ridibundus.

Larus ridibundus Linn.; McGregor & Worcester, p. 21.

a. ♂. Davao, May. No. 496.

108. Gallicrex cinerea.

Gallicrex cinerea (Lath.); McGregor & Worcester, p. 18.

a. ♂. Davao, May. No. 462.

"Iris brown; bill yellow, scarlet at the base, frontal shield fleshy-pink; feet ivory-grey, slightly greenish at the joints, nails greyish-white."

109. Amaurornis olivacea.

Amaurornis olivacea (Meyen); McGregor & Worcester, p. 17.

a. ♂. Davao, April. No. 393.

"Iris ruby-red; bill pale green, slightly yellowish; feet pale olive-brown; joints yellowish in front."

110. HYPOTÆNIDIA TORQUATA.

Hypotænidia torquata (Linn.); McGregor & Worcester, p. 16.

a, b. ♀ vix ad. et imm. Davao, Feb. Nos. 138, 196.

"Iris blood-red (vix adult) or golden-brown (immature); bill black; feet and nails ash-coloured."

The nearly adult female has the chin and middle of the throat whitish, and the chestnut band across the chest interrupted in the middle; in other respects it resembles the adult. The immature bird, with the wing about one-third grown, has a wide olive-brown band across the chest.

111. HYPOTÆNIDIA STRIATA.

Hypotænidia striata (Linn.); McGregor & Worcester, p. 15.

a. ♂. Davao, Feb. No. 193.

"Iris burnt-sienna; bill black, reddish towards the base; feet blackish-slate."

112. CHALCOPHAPS INDICA.

Chalcophaps indica (Linn.); McGregor & Worcester, p. 14.

a. ♂. Piso, May. No. 436.

b. ♂. Davao, May. No. 449.

"Iris dark brown, rim of eyelids crimson; bill purplish at the base, bright red at the tip; feet dark purplish-red."

113. TURTUR DUSSUMIERI.

Turtur dussumieri (Temm.); McGregor & Worcester, p. 13.

a. ♂. Davao, May. No. 446.

"Iris reddish-gold; bill leaden-coloured, purplish at the gape; feet red."

114. COLUMBA GRISEIGULARIS.

Columba griseigularis (Wald. & Layard); McGregor & Worcester, p. 13.

a–i. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 157, 168, 208, 259, 295 *a*, 296 *a*, 297, 298, 299 *a*.

"Iris golden (reddish-gold), eyelids crimson; bill yellowish white at the tip, crimson at the base; feet dull bluish or purplish red, nails whitish horn-coloured."

An egg of this species was procured on Mt. Apo; it is of a long rather pointed oval shape, pure white and somewhat glossy. It measures 1·66 by 1·1 inch.

115. PTILOCOLPA MINDANENSIS.

Ptilocolpa mindanensis Grant, Bull. B. O. C. xvi. p. 16 (1905).

a. ♂. Mt. Apo, 8000 ft. March. No. 240. (*Type of the species.*)

Adult male. Very similar to the male of *P. nigrorum* Whitehead, but with the chin, throat, and upper part of the chest nearly pure *white,* instead of grey, and the breast deep greyish-black. "Iris creamy-white; eyelids pale grey; bill scarlet at the base, pinkish-white towards the tip; feet dull purple."

Total length about 13·0 inches; wing 8·1; tail 4·5.

116. CARPOPHAGA POLIOCEPHALA.

Zonophaps poliocephala (Hartl.): McGregor & Worcester, p. 12.

a. ♂. Mapugba River, May. No. 421.

"Outer ring of the iris red, inner ring yellow, eyelids crimson; bill slate-black; feet blood-red, nails horn-coloured."

117. CARPOPHAGA CHALYBURA.

Carpophaga chalybura Bonap.; Grant, Ibis, 1894, p. 521; 1897, p. 249.

Muscadivora œnea (Linn.); McGregor & Worcester, p. 11.

a, b. ♂. Piso, April. Nos. 355, 495.

"Iris blood-red; bill light bluish grey, darker at the base; feet red."

118. PTILOPUS OCCIPITALIS.

Ptilopus occipitalis G. R. Gray; Grant, Ibis, 1897, p. 249.

Leucotreron occipitalis McGregor & Worcester, p. 10.

a–p. ♂ ♀. Mt. Apo, 8000 ft., Feb. and March. Nos. 149, 151, 155, 174, 200, 206, 220, 253, 262, 263, 266, 280, 281, 287, 288.

q. ♂. Mapugba River, May. No. 430.

"Iris golden-olive, eyelids pale grey; bill scarlet at the base, yellow at the tip; feet bright coral-red; nails black."

119. PHABOTRERON BREVIROSTRIS.

Phabotreron brevirostris Tweed.; Grant, Ibis, 1897, p. 249.

Phapitreron brevirostris McGregor & Worcester, p. 10.

a–c. ♂ ♀. Davao, Feb., March. Nos. 134, 191, 309.

d. ♂. Piso, April. No. 379.

"Iris with a broad inner ring of violet or purple and a narrow outer ring of blue; bare skin round the eyes primrose; bill black; feet red, purplish red, or coral-red."

120. PHABOTRERON AMETHYSTINA.

Phabotreron amethystina (Bonap.); Grant, Ibis, 1897, p. 249.

Phapitreron amethystina McGregor & Worcester, p. 10.

a–f. ♂ ♀. Mt. Apo, 8000 ft., Feb., March. Nos. 194, 218, 228, 246, 291*a*, 296.

"Iris golden-brown; bare skin round eyes pinkish, sometimes shading into blue behind the eyes; bill black; feet red."

121. OSMOTRERON VERNANS.

Osmotreron vernans (Linn.); McGregor & Worcester, p. 9.

a. ♂ vix ad. Davao, May. No. 464.

"Iris creamy-yellow, with a very narrow inner ring of dark blue; basal part of the bill greenish-yellow, tip pale bluish grey; feet pinkish red."

122. OSMOTRERON AXILLARIS.

Osmotreron axillaris (Bonap.); McGregor & Worcester, p. 9.

a–f. ♂ ♀. Piso, April. Nos. 333, 340, 354, 366, 368, 372.

"Iris turquoise-blue, rim of eyelids yellowish green; basal half of bill red, tip greenish white; feet and nails pale bluish grey."

123. GALLUS GALLUS.

Gallus gallus (Linn.); McGregor & Worcester, p. 8.

a, b. ♂ ♀. Mt. Apo, 8000 ft., March. Nos. 207, 294*a*.

"Iris reddish-gold; upper mandible black, lower mandible pale whitish horn-coloured; feet pale slate-coloured."

124. Megapodius cumingi.

Megapodius cumingi Dillw.; McGregor & Worcester, p. 7

a. ♂ juv. Mt. Apo, 8000 ft., March. No. 297 *a.*
b, c. ♂ ♀. Piso, April. Nos. 367, 473.
d. ♀. Mapugba River, May. No. 437.

"Iris dark golden-brown; bill black, dull yellow at the tip; feet black."

The immature bird resembles the adult in colour, but is about half the size.

A number of eggs of this species were sent home.

XXX.—*On a Collection of Birds made by Mr. Geoffrey Archer during a Journey to the Ruwenzori Range.* By F. J. Jackson, C.B., C.M.G. *With Notes by* R. Bowdler Sharpe, LL.D.

In 1902 my nephew, Geoffrey Archer, made an excursion to Ruwenzori, proceeding by way of Unyoro and the Albert Lake. The collection of birds from the latter place consisted chiefly of Waders, of which I was anxious to secure a good series, since much interest attaches to the winter-residences of the European *Charadriidæ.* Many species were plentiful on the Albert Lake and were very tame. My nephew went on the water in a 'dug-out,' and the birds, being accustomed to the native fishermen in similar canoes, were quite fearless and could be approached within a dozen yards.

For the whole distance between the shores of the Albert Lake and the escarpment good shooting may be had, although in quantity and variety it cannot be compared with that of East Africa. Thomas's Kob, Water-buck, Bush-buck, Harnessed Antelope, Hartebeeste, and the little Duykers were, however, all fairly common.

In the wet season this must be a grand place for Elephants, judging by their innumerable tracks. Buffalo-spoor was also plentiful, but none of the animals were seen. On Archer's return journey, however, he came up with a herd, which, he believes, were of the Central African species, but he was unfortunately unable to procure a specimen. To anyone who could spend a couple of months on Lake Albert, he fancies that the fishing would yield great results from a scientific point of view.

Mr. Archer has given me the following account of his expedition :—

"After a month's stay at Entebbe, extending over Christmas 1901, I started off for Ruwenzori, and the dates in my diary will indicate the route-march, and the days on which specimens were obtained :—

"Entebbe, Jan. 15–17, 1902 ; four marches from Entebbe, Jan. 19 ; five marches from Entebbe, Jan. 20 ; six marches from Entebbe, Jan. 21 ; Toro, Jan. 23–27 ; Kibera Forest, Jan. 28–Feb. 1 ; Crater Lake, near Fort Portal, Jan. 29 ; Fort Portal, Feb. 3 ; Katwe, Feb. 4 ; Ruwenzori, Feb. 7–26 ; open country between Kangao's and Lake Albert Edward, one march from the foot of Ruwenzori, Feb. 28 ; near Kangao's, Toro, Feb. 28 ; Katwe, Toro, March 1 ; open country, dotted with trees, March 2 ; swamp, March 3 ; near Katwe, March 3–9 ; near Kangao's, March 10–16 ; Toro, March 16–18 ; Toro Forest, March 19–21 ; Toro, March 22–27 ; Ankole, March 28–April 6 ; Nairobi, June 11–25, 1902."

It must be understood that all the field-notes referring to the specimens are taken from my nephew's diary. Dr. Bowdler Sharpe has added some observations, which are enclosed in brackets and signed with his initials.

1. PTERNISTES CRANCHI.

Pternistes cranchi (Leach) ; Sharpe, Hand-l. B. i. p. 26 (1899) ; Hartert, Nov. Zool. vii. p. 30 (1900 : Mokia River, Toro) ; Reichenow, Vög. Afrikas, i. p. 457 (1901), iii. Nachtrag, p. 814 (1905).

H. 964. ♂ ad. Katwe, Toro, March 6, 1902. Iris brown ; bare patch round eye and bare throat bright brick-red ; bill and feet more of a coral shade.

H. 965. ♂ juv. Katwe, March 6, 1902. Bill dark slaty-brown ; feet deep coral-pink ; iris hazel-brown.

H. 966. ♂ juv. Katwe, March 6, 1902. Feet bright coral-red.

H. 991. ♀ ad. Katwe, March 8, 1902. Iris brown; bare space round eye and bare throat brick-red; bill and feet coral-red.

H. 999. ♀ ad. Katwe, March 9, 1902.

H. 1012. ♂. Kangao's, Toro, March 10, 1902.

H. 1013, 1014. ♂. Kangao's, March 10, 1902.

Near Katwe there were great numbers of these birds. I believe this to be the only Partridge found in the neighbourhood. It was also extremely common near Kangao's. The harsh note, 'Kareck Kareck,' is, I think, uttered only by the male, but it is unmistakable. Considering the abundance of this species, the absence of Quails is remarkable.

[The adult birds seem to be identical with those from Landana and the Congo. The series of specimens from Nyasa-land in the Museum have blacker longitudinal streaks on the fore-neck and chest, while the breast-feathers in particular are whiter with scarcely any vermiculations. The under parts appear whiter than in true *P. cranchi,* and the sides of the face and neck are more mottled with white. These birds may be *P. böhmi* of Reichenow, but until typical specimens of the latter are available for comparison, it is difficult to decide. The Nyasa-land bird may constitute a distinct light-chested race.—R. B. S.]

2. NUMIDA TOROENSIS.

Numida ptilorhyncha toruensis Neumann, J. f. O. 1904, p. 410; Reichenow, Vög. Afrikas, iii. p. 813 (1905).

Numida ptilorhyncha (nec Licht.); Hartert, Nov. Zool. vii. p. 30 (1900: Nakabimba, Toro; Mokia R., Toro; Holulu R., tributary of the Semliki).

H. 957. ♂ ad. Near Katwe, Toro, March 6, 1902. Iris hazel-brown; all the bare skin extending from under the eye to the back of the neck pale blue; bill a ruddy brown, likewise the whole of the top of the head; feet blackish brown. There seem to be numbers of these birds about, and they appear to be bigger and heavier than the Uganda birds.

H. 958. ♂ imm. Katwe, March 6, 1902.

H. 973. ♂ ad. Katwe, March 6, 1902. Iris brown; all the bare part beneath the eye bright blue; bill ruddy brown; feet blackish brown.

H. 1000. ♂ ad. Katwe, March 9, 1902.

H. 1011. ♂ ad. Near Kangao's, March 10, 1902. I have never known Guinea-fowl so plentiful. This morning they were all round and within thirty yards of the camp; they were not in the least shy, some of them walking about, within gun-shot, in the little open patches of short green grass.

H. 1060. ♀ ad. Near Kangao's, March 15, 1902. Iris hazel-brown; bill brownish black; feet dark brown.

H. 1109. ♀ ad. Toro Forest, March 20, 1902. Iris ruddy brown; bill light ruddy brown; bare skin below eye 'Cambridge' blue; feet light sepia-brown. This bird had four eggs inside her.

3. COLUMBA ARQUATRIX.

Palumbus arquatrix (Temm.); Sharpe, Ibis, 1892, p. 548 (Machako's; Sotik; Mt. Elgon).

Columba arquatrix Sharpe, Hand-l. B. i. p. 70 (1899); Neum. J. f. O. 1904, p. 346 (Lake Abassi; Buka Mts. in Kaffa; Schenna, W. Kaffa; Budda, in Gimirra); Reichenow, Vög. Afrikas, i. p. 404 (1900).

H. 1096. ♂ ad. Toro Forest, March 19, 1902. Iris light greyish green; bare skin round eye lemon-yellow, suffused with pink; bill light brown; feet lemon-yellow.

Fairly common in the forest. I have only met with this bird at one other place, viz. at the foot of the Kangao hills.

4. STREPTOPELIA SEMITORQUATA.

Turtur semitorquatus (Rüpp.); Hartert, Nov. Zool. vii. p. 30 (1900: Nairobi); Neum. J. f. O. 1904, p. 347 (Abassi Lake; C. Omo; Koscha; Gelo River); Reichenow, Vög. Afrikas, i. p. 409 (1900), iii. Nachtrag, p. 807 (1905).

Streptopelia torquata Sharpe, Hand-l. B. i. p. 78 (1899).

H. 701. ♂ ad. Entebbe, Jan. 16, 1902. Iris nearly salmon-pink; skin round eye claret-coloured; bill black, verging into deep maroon at the base; feet light plum-coloured.

H. 870. ♀ ad. Ruwenzori, Feb. 19, 1902. Bill dull black; feet light plum-coloured; rim of eye and bare ocular space maroon; iris with a thin golden rim.

5. STIGMATOPELIA SENEGALENSIS.

Turtur senegalensis (Linn.); Sharpe, Ibis, 1892, p. 547 (Teita; Machako's; Turquel); Hartert, in Ansorge's Afr. Sun, App. p. 329 (1899: Teita; Uganda); Neum. J. f. O. 1904, p. 346 (Gindeberat Prov., Shoa); Reichenow, Vög. Afrikas, i. p. 406 (1900), iii. Nachtrag, p. 807 (1905).

Stigmatopelia senegalensis Sharpe, Hand-l. B. i. p. 80 (1899).

H. 709. ♀ ad. Toro, Jan. 23, 1902. Iris brown; bill black, slightly tinged with the very deepest maroon; feet light plum-coloured.

6. CHALCOPELIA AFRA.

Chalcopelia afra (Linn.); Sharpe, Ibis, 1892, p. 547 (Mt. Elgon); id. Hand-l. B. i. p. 83 (1899); Hartert, Nov. Zool. vii. p. 30 (1900: Uganda); Reichenow, Vög. Afrikas, i. p. 426 (1900), iii. Nachtrag, p. 811 (1905); Neum. J. f. O. 1904, p. 349.

H. 1176. ♂ ad. Ankole, April 4, 1902.

7. STEPHANIBYX INORNATUS.

Stephanibyx inornatus (Swains.); Neumann, J. f. O. 1898, p. 261 (Zanzibar); Sharpe, Hand-l. B. i. p. 152 (1899); Reichenow, Vög. Afrikas, i. p. 179 (1900).

Chettusia inornata Hartert, Nov. Zool. 1900, p. 27 (Lake Kikorongo, Albert Nyanza).

H. 939. ♀ ad. Near Katwe, Toro, March 3, 1902. Iris yellow; bill and feet dull black.

I saw several flocks of these birds, generally half a dozen or a dozen together, but in one flock there must have been thirty individuals. Their flight, as they moved off in a body, was low and rapid, and reminded me more of that of the Redshank (*Totanus calidris*) or of the Dunlin (*Heteropygia alpina*) than of that of a Plover.

8. RHYACOPHILUS GLAREOLA.

Totanus glareola (Linn.); Sharpe, Ibis, 1892, p. 545 (Machako's); Hartert, in Ansorge's Afr. Sun, App. p. 327 (1899: Unyoro); Reichenow, Vög. Afrikas, i. p. 222 (1900).

Rhyacophilus glareola Sharpe, Hand-l. B. i. p. 162 (1899).

H. 1177. ♀ ad. Ankole, April 6, 1902. Iris brown; bill black; feet greenish yellow.

9. NETTIUM PUNCTATUM.

Nettium punctatum (Burch.); Salvad. Cat. B. Brit. Mus. xxvii. p. 265 (1895); Neum. J. f. O. 1898, p. 255 (Lake Manjara; Kibaya, Masai-Land); Sharpe, Hand-l. B. i. p. 219 (1899); Hartert, in Ansorge's Afr. Sun, App. p. 326 (Lake Naiwasha; Uganda); Sharpe, Ibis, 1902, p. 105 (Entebbe).

Anas punctata Reichenow, Vög. Afrikas, i. p. 120 (1900).

H. 722. ♀ ad. Crater Lake, near Fort Portal, Toro, Jan. 29, 1902. Iris brown; bill light slaty-blue; feet light slaty-blue.

I shot this Teal on one of the Toro Crater Lakes. It was without doubt the commonest Duck on the Lake, and we must have seen between one and two hundred individuals. They were usually in parties of two or three, and were very wild, as well as being very strong on the wing.

10. AETHYIA ERYTHROPHTHALMA.

Nyroca brunnea Eyton; Neum. J. f. O. 1898, p. 254 (Kibaya, Masai-Land).

Nyroca capensis Less.; Reichenow, Vög. Afrikas, i. p. 108 (1900).

Aythya erythrophthalma Sharpe, Hand-l. B. i. p. 223 (1899).

H. 723. ♂. Crater Lake, near Fort Portal, Toro, Jan. 29, 1902. Iris bright orange; bill light bluish slate-coloured; feet light grey, much intersected with black. These birds were also numerous on the Lake.

11. CIRCUS PYGARGUS.

Circus pygargus (Linn.); Sharpe, Hand-l. B. i. p. 345 (1899); Reichenow, Vög. Afrikas, i. p. 534 (1901).

H. 1157. ♀ imm. Ankole, March 24, 1902. Iris yellow; bill black; cere lemon-yellow; feet bright yellow.

[A young bird in moult. I believe it to be referable to Montagu's Harrier, as the notch in the second primary is situated clear of the primary-coverts, though scarcely an inch away. *Cf.* Catalogue of Birds, i. p. 52.—R. B. S.]

12. Circus ranivorus.

Circus ranivorus (Daud.); Sharpe, Hand-l. B. i. p. 246 (1899); Reichenow, Vög. Afrikas, i. p. 540 (1901).

H. 714. ♂ imm., ♂ ad. Toro, Jan. 26, 1902. Iris very deep bright lemon-coloured; bill slaty-black, with a greenish tinge at the base of the lower mandible; cere dirty light lemon-coloured; feet light yellow. This and *Circus pygargus* were shot while hawking over the burnt grass in search of rats.

H. 1168. ♀ ad. Ankole, April 2, 1902. Iris yellow; bill slaty-black; cere greenish lemon-coloured; feet yellow.

[This is apparently the first record of the present species so far to the northward.—R. B. S.]

13. Buteo augur.

Buteo augur Rüpp.; Sharpe, Ibis, 1892, p. 536 (Ukambani; Masai-Land; Mt. Elgon); id. Hand-l. B. i. p. 255 (1899); Neum. J. f. O. 1899, p. 80 (Kilimanjaro); Hartert, Nov. Zool. vii. p. 31 (1900: Fort Gerry, Lake Varangot, Toro); Reichenow, Vög. Afrikas, i. p. 592 (1901); Sharpe, Ibis, 1902, p. 108 (Eldoma Ravine); Neum. J. f. O. 1904, p. 362 (Adis Abeba; Gofa; Lake Abassi; Gimirra; Kaffa; Soko).

H. 705. ♀ ad. Four marches out from Entebbe, Jan. 19, 1902. At first I mistook this bird for a Crested Eagle, as, at eighty yards' distance, it appeared quite black. It was sitting at the top of a dead tree, looking out for rats, remains of some of which were found in its stomach. The grass had been burnt for some distance round the tree.

H. 747. ♀ ad. Near Fort Portal, Feb. 3, 1902. Iris hazel-brown; bill dark slaty, horn-blue at the base; cere bright deep lemon-yellow; feet bright lemon-yellow. Since obtaining my last specimen (No. 705) I have seen three others of this species, so that it must be well represented here in Toro.

H. 1110. ♂ ad. Toro, March 20, 1902. Iris brown; bill dark slate-coloured; cere lemon-yellow; feet dirty brown. I have seen a good many of these birds in Toro, but have seldom been able to get within range of them. They are extremely wary, even for Accipitrine birds.

H. 1129. ♀ juv. Toro, March 22, 1902. Iris brown; bill slate-coloured; cere and feet lemon-yellow.

H. 1138. ♀ juv. Toro, March 25, 1902. Bill darkish slate-coloured.

14. BUTEO DESERTORUM.

Buteo desertorum (Daud.); Sharpe, Ibis, 1892, p. 537 (Kikuyu; Turquel); id. Hand-l. B. i. p. 255 (1899); Neum. J. f. O. 1899, p. 51 (Kilimanjaro); Reichenow, Vög. Afrikas, i. p. 594 (1901).

Buteo buteo desertorum Neumann, J. f. O. 1904, p. 365 (Gindeberat, Shoa).

H. 812. ♂ imm. Ruwenzori, Feb. 12, 1902. Iris white; bill slaty-black, horn-blue at base; feet yellow; cere lemon-yellow. This bird was brought to me by a Manyema, who had trapped it with a fibre-noose on the ground.

H. 874. ♂ imm. Ruwenzori, Feb. 21, 1902. Iris brownish white; bill slaty-black; cere lemon-yellow; feet yellow. These birds are fairly numerous here. Their cry, or call, is very curious, and can be heard for a great distance. Their staple article of food seems to consist of the chickens of the natives. With the exception of the Kite and the Crested Eagle, this is the only representative of the Accipitres that I have seen here.

H. 1093. ♀ imm. Toro, March 17, 1902. Iris white, suffused with brown; bill slaty-black; cere and feet lemon-yellow. This bird, which was often to be seen on the wing up the Ruwenzori, is not so common down here. I have only twice seen the species since leaving the mountain.

15. AQUILA WAHLBERGI.

Aquila wahlbergi Sund.; Sharpe, Hand-l. B. i. p. 261 (1899).

Nisaetus wahlbergi, Neumann, J. f. O. 1899, p. 44 (Tanga; Teita).

Hieraetus wahlbergi Reichenow, Vög. Afrikas, i. p. 581 (1901); Neumann, J. f. O. 1904, p. 362 (Omo River district).

H. 706. ♂ ad. Five marches from Entebbe, Uganda, Jan. 20, 1902. Iris brown; bill slaty-black; cere bright lemon-yellow; toes dull lemon-yellow.

H. 713. ♂ ad. Toro, Jan. 26, 1902. Iris brown; bill slaty-black; cere lemon-yellow; feet light lemon-yellow. This bird was sitting on the small dead stump of a tree not fifteen feet high, standing in the midst of some burnt grass. Notwithstanding the absence of cover, the bird allowed me to approach within thirty-five yards of its perch, when I managed to secure it.

H. 967. ♂ ad. Near Katwe, Toro, March 6, 1902. Iris hazel-brown; bill dark slate-coloured; cere and feet lemon-yellow.

H. 1073. ♂ imm. Toro, March 16, 1902. Iris brown; bill slaty-black; cere and feet lemon-yellow.

[In some instances Wahlberg's Eagle bears a resemblance to the Spotted Eagle (*Aquila maculata*). It seems, however, always to have the pointed crest-feathers well in evidence, and does not shew the white on the upper tail-coverts, which are always more or less developed in *A. maculata*.—R. B. S.]

16. PŒOCEPHALUS SATURATUS.

Pœocephalus saturatus Sharpe, Bull. B. O. C. xi. p. 67 (1901); id. Ibis, 1902, p. 109 (N. Ankole).

H. 915. ♂ ad. Kangao's, Toro, Feb. 28, 1902. Iris orange; bill black; feet darkish grey.

H. 1152. ♂ juv. Ankole, March 28, 1902. Iris orange; bill dark horn-brown; feet dirty greyish black.

Found everywhere, generally two or three individuals together. This and the little *Agapornis* are the only Parrots that I met with.

[Dr. Reichenow suggests that this species is identical with *P. meyeri reichenowi* of Neumann (J. f. O. 1898, p. 501) from Angola and the Congo. Mr. Neumann, however, saw my type-specimen when he was in London, and considered it to belong to a distinct race. It is quite possible, however, that Dr. Reichenow may be right (*cf.* Vög. Afrikas, ii. p. 14).—R. B. S.]

17. AGAPORNIS PULLARIA.

Agapornis pullaria (Linn.); Sharpe, Hand-l. B. ii. p. 35 (1900); id. Ibis, 1902, p. 109 (Entebbe); Jackson, t. c. p. 613 (Entebbe); Reichenow, Vög. Afrikas, ii. p. 21 (1902).

H. 954–956. ♂ ad. Katwe, Toro, March 5, 1902. Iris brown; bill salmon-pink; feet light grey. Extremely common here. In passing this shamba I must have seen between twenty and thirty of these birds climbing about the trees amongst the bananas.

18. CORACIAS CAUDATUS.

Coracias caudatus Linn.; Sharpe, Ibis, 1892, p. 316 (Machakos); id. Hand-l. B. ii. p. 46 (1900); Hartert, Nov. Zool. vii. p. 33 (1900: Nairobi); Reichenow, Vög. Afrikas, ii. p. 223 (1902); Jackson, Ibis, 1902, p. 613 (Ukambani: Teita).

H. 1169. ♀ ad. Ankole, April 2, 1902. Iris rather light brown; bill dull black; feet dirty light brownish green.

The scarcity of true Rollers on this expedition has been somewhat remarkable, considering the number of the broad-billed *Eurystomi* that we have met with. I have so far only seen one other specimen, though between Imberara and Resaka they seemed to be fairly common.

19. EURYSTOMUS AFER.

Eurystomus afer (Lath.); Hartert, in Ansorge's Afr. Sun, App. p. 333 (1899); id. Nov. Zool. vii. p. 33 (1900: Kilgurma (Buckella), Uganda); Reichenow, Vög. Afrikas, ii. p. 228 (1902); Sharpe, Hand-l. B. ii. p. 47 (1900); id. Ibis, 1902, p. 109 (Entebbe); Jackson, t. c. p. 614 (Kavirondo; Kampala; Eldoma Ravine); Neumann, J. f. O. 1905, p. 186.

H. 914. ♀ imm. Near Kangao's, in the open country between Kangao's and the Albert Lake, Feb. 22, 1902. Iris light greenish grey; bill yellow; feet brown, much scored with white. Four of these birds were sitting together on the branches of a great dead tree. Every now and then one would soar up into the air, sometimes hovering there for a second or two, and after repeating this action two or three times, would return to the tree, but not always to the same branch. I have noticed this habit also in the case of Bee-eaters.

H. 978. ♂ ad. Katwe, Toro, March 7, 1902. Bill yellow; feet light greyish green. An exceedingly common bird in Toro.

H. 1061. ♂ ad. Near Kangao's, March 16, 1902. Bill yellow; feet dirty brownish green. Nearly always to be met with in fairly open bush, with a few dead trees about.

H. 1116. ♂ ad. Toro Forest, March 20, 1902. Four of these birds were hawking about at sunset, after the fashion of Nightjars. Evidently very common in these parts.

H. 1171. ♂ imm. Ankole, April 4, 1902. Iris brown; bill yellow; feet light greyish green.

[I do not see how these birds can be separated from *E. afer* of West Africa, but a further study is necessary.—R. B. S.]

20. EURYSTOMUS GULARIS.

Eurystomus gularis Vieill.; Sharpe, Hand-l. B. ii. p. 47 (1900); Hartert, Nov. Zool. vii. p. 33 (1900: Kitimi, Ituri Forest); Reichenow, Vög. Afrikas, ii. p. 231 (1902).

H. 1076. ♂ ad. Toro, March 17, 1902. Bill yellow; feet dirty brownish green.

[I cannot separate this specimen from West African examples of *E. gularis*. Some of the upper tail-coverts are edged with blue, but I find traces of the same colour on specimens from Gaboon and the Gold Coast.—R. B. S.]

21. ISPIDINA PICTA.

Ispidina picta (Bodd.); Sharpe, Ibis, 1892, p. 316 (Mt. Elgon); id. Hand-l. B. ii. p. 54 (1900); Reichenow, Vög. Afrikas, ii. p. 286 (1902); Sharpe, Ibis, 1902, p. 109 (Lake Baringo); Neumann, J. f. O. 1905, p. 190 (Koscha).

H. 983. ♀ ad. Near Katwe, Toro, March 7, 1902. Iris brown; bill and feet coral-red.

22. HALCYON CENTRALIS.

Halcyon semicærulea (nec Forsk.), Sharpe, Ibis, 1892, p. 317 (Turquel); Hartert, in Ansorge's Afr. Sun, App. p. 335 (1899, pt.; Unyoro); Jackson, Ibis, 1902, p. 685 (E. Kamassia; Eldoma Ravine); Reichenow, Vög. Afrikas, ii. p. 276 (1903).

Halcyon semicærulea centralis Neum. J. f. O. 1905, p. 190 (Victoria Nyanza; Masai-Land).

H. 940. ♂ imm. Near Katwe, Toro, March 3, 1902. Iris brown; bill and feet coral-red.

23. HALCYON CHELICUTENSIS.

Halcyon chelicutensis Jackson, Ibis, 1902, p. 616 (Entebbe).

Halcyon cheliculi Hartert, in Ansorge's Afr. Sun, App. p. 336 (1899).

H. 982. ♂ ad. Katwe, Toro, March 7, 1902. Iris hazel-brown; bill dark reddish brown, lower mandible coral-red; feet reddish brown.

24. LOPHOCEROS SUAHELICUS.

Lophoceros melanoleucus (A. Licht.); Sharpe, Ibis, 1892, p. 318 (Mt. Elgon); id. Hand-l. B. ii. p. 67 (1900, pt.); id. Ibis, 1902, p. 110 (Eldoma Ravine); Jackson, t. c. p. 616 (Uganda; Kamassia; Nandi); Reichenow, Vög. Afrikas, ii. p. 249 (1902, pt.), iii. p. 826 (1905).

Lophoceros melanoleucus suahelicus Neumann, J. f. O. 1905, p. 187.

H. 1112. ♂ ad. Toro, March 20, 1902. Iris light yellow; bill carmine; feet brownish black.

Frequently to be seen and heard in the forest of Toro.

[This specimen agrees with others in the British Museum from Nyasa-land, Machakos, the Eldoma Ravine, &c. It is a blackish race of *L. melanoleucus* of South Africa, and sometimes it is almost impossible to distinguish it from the latter. *L. angolensis* Reichenow, on the other hand, seems to be more distinct, being lighter brown, with narrow pale borders to the quills, and the sides of the face and throat light ashy.—R. B. S.]

25. IRRISOR JACKSONI.

Irrisor jacksoni Sharpe, Ibis, 1890, p. 503, 1892, p. 319 (Turquel); id. Hand-l. B. ii. p. 71 (1900); Hartert, in Ansorge's Afr. Sun, App. p. 337 (1899: Eldoma Ravine); id. Nov. Zool. vii. p. 35 (1900: Nairobi; Fort Mbéni); Sharpe, P. Z. S. 1900, p. 601 (Kenya Forest); Reichenow, Vög. Afrikas, ii. p. 313 (1902); Jackson, Ibis, 1902, p. 618 (Eldoma Ravine; Nandi).

Irrisor bollei jacksoni Neumann, J. f. O. 1905, p. 196.

H. 721. ♀ ad. Kibera Forest, Jan. 28, 1902. Iris brown; bill and rim of loose skin round the eyes carmine; toes dull crimson. A small flock of these birds—about six of them—was noticed climbing about at the top of a very high tree.

H. 724. ♀ ad. Kibera Forest, Jan. 30, 1902. Iris brown; bill carmine-red; rim round eye carmine; feet dull crimson. Numerous here. I saw two more small flocks, with five or six birds in each.

26. RHINOPOMASTUS SCHALOWI.

Rhinopomastus cyanomelas (nec V.); Hartert, in Ansorge's Afr. Sun, App. p. 337 (1899).

Rhinopomastus schalowi Neumann, J. f. O. 1900, p. 221; Sharpe, Ibis, 1902, p. 110 (Eldoma Ravine); Jackson, t. c. p. 618 (Eldoma Ravine).

H. 932. ♂ imm. Open country near Katwe, March 2, 1902. Iris hazel-brown; bill and feet black.

This is the first time that we have met with this species. The specimen which I saw was clinging to the branch of a small tree in a manner similar to that of a Tit.

H. 937. ♀ ad. In open country near Katwe, March 2, 1902.

H. 960. ♂ ad. Near Katwe, March 6, 1902.

Distinctly rare. We have seen only three or four specimens. Frequents open country dotted with trees.

H. 1003. ♀ imm. Near Katwe, March 9, 1902. To-day I saw four of these birds together.

H. 1048. ♂ imm. Near Kangao's, March 12, 1902.

These birds generally go about singly and make for the upper branches of the trees, sometimes clinging to the lower side of a branch. The body has a very strong and disagreeable smell.

27. MELITTOPHAGUS OREOBATES.

Melittophagus oreobates Sharpe, Ibis, 1892, p. 320 (Mt. Elgon; Kimangitchi); id. P. Z. S. 1900, p. 602 (Nairobi); Jackson, Ibis, 1902, p. 620 (Nandi); Reichenow, Vög. Afrikas, ii. p. 305 (1902).

H. 912. ♂ ad. Ruwenzori, Feb. 26, 1902. Iris crimson; bill black; feet greyish brown.

28. MELITTOPHAGUS MERIDIONALIS.

Melittophagus meridionalis Sharpe; id. Hand-l. B. ii. p. 72 (1900); Reichenow, Vög. Afrikas, ii. p. 307 (1902).

H. 927. ♂ ad. Near Katwe, Toro, March 1, 1902. Iris crimson; bill black; feet greyish brown.

This is the only place where I have seen as many as twenty or thirty of these birds together. Just before sunset they circle about in the air, hawking for flies and little insects.

29. MEROPS PERSICUS.

Merops persicus Pall.; Sharpe, Hand-l. B. ii. p. 74 (1900); Reichenow, Vög. Afrikas, ii. p. 322 (1902).

H. 1050. ♂ ad. Near Kangao's, Toro, March 13, 1902.
H. 1052. ♂ ad. „ „ „ March 14, 1902.

Iris crimson; bill black; feet greyish brown.

30. AEROPS ALBICOLLIS.

Merops albicollis (Vieill.); Sharpe, Hand-l. B. ii. p. 74

(1900); Jackson, Ibis, 1902, p. 622 (Entebbe; Elgeyu; Eldoma Ravine).

Aerops albicollis Reichenow, Vög. Afrikas, ii. p. 317 (1902).

H. 1026. ♂ ad. Near Kangao's, Toro, March 11, 1902. Iris crimson; bill black; feet green.

This bird was new to me. I saw several other individuals this evening. I did not meet with it in Unyoro.

H. 1057, 1058. ♂ ♀ ad. Near Kangao's, March 15, 1902. Iris crimson; bill black; feet dirty brownish yellow.

H. 1059. ♀ ad. Near Kangao's, March 15, 1902. Feet greyish green.

Numerous at our camp of this date: occurred along with the little *Melittophagus*.

31. SCOTORNIS CLIMACURUS.

Scotornis climacurus (V.); Sharpe, Hand-l. B. ii. p. 82 (1900); Jackson, Ibis, 1902, p. 622 (Entebbe); Reichenow, Vög. Afrikas, ii. p. 368 (1902).

H. 975. ♀ ad. Near Katwe, Toro, March 6, 1902. Feet darkish brown.

H. 1024. ♂ ad. Near Kangao's, Toro, March 11, 1902. Iris brown; bill darkish brown; feet fleshy brown. A common bird here and easy to procure at dusk, because of the white which shews up most conspicuously.

[So far as I can determine, both these examples are *Scotornis climacurus* and neither is *Caprimulgus apatelius* of Neumann (J. f. O. 1905, p. 198). Mr. Neumann has identified a specimen collected by Sir A. Pease (*C. fossei*, Grant, Ibis, 1901, p. 672) as belonging to his species, and I think that three birds from Danakil, obtained by Mr. Degen, are also *C. apatelius*. The white bar on the first primary does not always seem to be continuous across the outer web, and can hardly be considered a certain character. I am not at all satisfied as to *C. apatelius* being a valid species.—R. B. S.]

32. MACRODIPTERYX LONGIPENNIS.

Macrodypteryx longipennis (Shaw); Sharpe, Hand-l. B. ii. p. 82 (1900).

Macrodipteryx macrodipterus (Lath.); Reichenow, Vög. Afrikas, ii. p. 370 (1902).

H. 712. ♂ ad. Toro, Jan. 26, 1902. Iris coffee-brown; bill brown, very dark at the tip; feet darkish brown, much scored with white.

This bird was put up in broad daylight, and on first getting a glimpse of it we received the impression of three birds rising together. When seen on the wing in the dusk it looks like two small birds mobbing a big one. The specimen procured was lying up in a patch of burnt grass, close by the side of a small shamba.

H. 1015. ♂ ad. Near Kangao's, Toro, March 10, 1902. Iris bright; bill darkish brown; feet walnut-brown.

33. COSMETORNIS VEXILLARIUS.

Cosmetornis vexillarius (Gould); Sharpe, Hand-l. B. ii. p. 82 (1900); id. Ibis, 1902, p. 111 (N. Ankole).

Macrodipteryx vexillarius Reichenow, Vög. Afrikas, ii. p. 371 (1902).

H. 864. ♂ ad. Ruwenzori, Feb. 18, 1902. Iris brown; bill darkish brown; feet lightish brown, much scored with white.

This bird was sitting along the bough of a dead tree, and on seeing us fluttered off and settled on the bough of another dead tree close by. I do not think that there can be many Nightjars about here. A few nights ago I saw one very high up, which dashed past and was gone in a second. Yesterday, on the mountain, I put up a bird which I have not seen before—a very large bird with a broad white band on each wing, which shewed up conspicuously as it flew away. Unfortunately I had only my ·410 rifle in my hand and did not fire, hoping that it would settle.

H. 994. ♀ ad. Near Katwe, Toro, March 8, 1902. Iris brown; bill reddish brown; feet light greyish brown.

H. 1025. ♂ ad. Near Kangao's, Toro, March 11, 1902. Soft parts as in H. 994.

H. 1127. ♂ juv. Toro, March 26, 1902.

34. CAPRIMULGUS NATALENSIS.

Caprimulgus natalensis Smith; Sharpe, Hand-l. B. ii. p. 85 (1900); Reichenow, Vög. Afrikas, ii. p. 367 (1902); Jackson, Ibis, 1902, p. 622 (Entebbe); Grant, Ibis, 1905, p. 199.

H. 922, 923. ♂ ♀ ad. Near Katwe, Toro, March 1, 1902. Iris brown; bill brown; feet light fleshy brown.

Very common. When out in the evening looking for Partridges, I continually flushed two or three of these Goatsuckers from amongst the long dead grass and bushes. At night they were met with everywhere.

H. 974. ♀ ad. Katwe, March 6, 1902. Iris brown; bill reddish brown; feet brownish flesh-coloured. The common species here.

[This Goatsucker was recorded for the first time in Equatorial Africa by Mr. Jackson (*l. c.*). I cannot find any difference between specimens from Toro and others from South-eastern Africa.—R. B. S.]

35. TACHORNIS MYOCHROUS.

Tachornis parvus myochrous Reichenow; id. Vög. Afrikas, ii. p. 385 (1903).

H. 925. ♀ ad.; H. 929. ♂ ad. Near Katwe, Toro, March 1, 1902. Iris brown; bill black; feet dark sepia-brown.

Very common. I have noticed these birds several times in company with the Great Swifts. On the road to Unyoro they are continually to be met with, especially in the neighbourhood of palm-trees, round which they circle in quest of flies. They are to be found all over Toro, but I did not see them on Ruwenzori.

[These specimens seem to belong to the race called by Dr. Reichenow *T. myochrous*, and not to true *T. parvus*. He has worked out these Palm-Swifts very carefully, but I am not quite convinced as to the distinctness of some of the races which he admits.—R. B. S.]

36. CYPSELUS AFRICANUS.

Cypselus africanus (Temm.); Sharpe, Hand-l. B. ii. p. 95 (1900).

Apus melba africanus (Temm.); Reichenow, Vög. Afrikas, ii. p. 377 (1902).

H. 748. ♀ ad. Katwe, Toro, Feb. 4, 1902. Iris brown; bill black; toes very light flesh-coloured, claws sepia-brown.

The first occasion on which I have met with this species. A flock of some ten or twelve individuals was flying over the camp, but at a great height. An approaching storm had the effect of bringing them nearer to the earth, when I was able to obtain a specimen.

H. 1126. ♀ ad. Toro, March 22, 1902. Iris brown; bill black; feet dirty brown.

A common bird in Toro. Two or three of the smaller species were usually to be seen amongst the flocks.

On March 24th, during the morning, I saw hundreds of these birds, very often flying quite low amongst the Swallows and Martins. I had no idea that they were so common: they were very much more plentiful than the smaller long-winged species, which, I think, must be very local.

37. COLIUS MACRURUS.

Colius macrurus (Linn.); Sharpe, Hand-l. B. ii. p. 146 (1900); Reichenow, Vög. Afrikas, ii. p. 210 (1902); Jackson, Ibis, 1902, p. 626 (E. Kamassia: Kedong Valley).

H. 1006. ♂ ad. Near Katwe, Toro, March 9, 1902. Iris crimson; bill coral, tip and lower mandible black; bare patch round eye plum-coloured; feet heliotrope-coloured.

H. 1019, 1020. ♂ ♀ ad. Near Kangao's, Toro, March 10, 1902.

We found the nest of this bird. It was built on the top of the old nest of a Weaver-Finch. The eggs were four in number.

38. HAPALODERMA NARINA.

Hapaloderma narina (Steph.); Sharpe, Ibis, 1892, p. 321 (Mt. Elgon); id. Hand-l. B. ii. p. 150 (1900); Jackson, Ibis, 1902, p. 627 (Eldoma Ravine; Elgeyu; Nandi).

Apaloderma narina Reichenow, Vög. Afrikas, ii. p. 212 (1902).

H. 1102. ♀ ad. Toro Forest, March 19, 1902. Iris ruddy brown; bill very light green, yellowish at the base; feet light greyish blue. The only example seen.

39. TURACUS EMINI.

Turacus emini Reichenow, Orn. MB. 1893, p. 30; id. Vög. Afrikas, ii. p. 50 (1902); Sharpe, Hand-l. B. ii. p. 153 (1900).

H. 862. ♂ ad. Ruwenzori, Feb. 18, 1902. Iris yellowish brown; rim round eye and patch above bright coral-red; bill black, base of lower mandible squashed-strawberry-red; feet blackish brown.

H. 863. ♂ ad. Ruwenzori, Feb. 18, 1902.

This glorious bird is, I think, not nearly so common as the other species. Its cry is quite different, closely resembling that of the Uganda Plantain-eater. This form is, moreover, only found high up the mountain-sides.

H. 879. ♀ ad. Ruwenzori, Feb. 22, 1902. Iris yellowish brown, almost yellow-ochre; bill black, lower mandible squashed-strawberry-red; rim round eye and patch above brightest coral-red; feet dull brownish black.

H. 900. ♀ ad. Ruwenzori, Feb. 24, 1902. Iris yellowish brown.

40. RUWENZORORNIS JOHNSTONI.

Gallirex johnstoni Sharpe, Bull. B. O. C. xi. p. 57 (1901); id. Ibis, 1902, p. 112, pl. v.; Reichenow, Vög. Afrikas, ii. p. 41 (1902), iii. p. 823 (1905).

Ruwenzorornis johnstoni Neumann, Bull. B. O. C. xiv. p. 14 (1903).

H. 857. ♀ ad. Ruwenzori, Feb. 17, 1902. Iris brown; rim round eye deep coral-red; bare patch in front of eye lemon-yellow, behind the eye crimson; bill light green, the tip black, the culmen of the colour of a squashed strawberry, as also the base of the lower mandible; feet blackish brown.

I have seen great numbers of this Touraco, which is evidently the new bird discovered by Sir Harry Johnston. The cry is absolutely unlike that of any other Plantain-eater. On first hearing it, I paid no particular attention, taking it for that of some Bush-bird, but my guide assured me that it was the bird with crimson wings for which I was looking. Like other Touracos, it goes about in flocks, and is only to be found high up in the forest.

H. 861. ♂ ad. Ruwenzori, Feb. 18, 1902.

H. 881. ♂ ad. Ruwenzori, Feb. 22, 1902. Soft parts as in H. 857.

H. 889, 890. ♂. Ruwenzori, Feb. 23, 1902.

The two kinds of Crimson-winged Plantain-eaters are, I think, very local. A hundred yards in front of the camp a thickly-wooded upward slope begins, and this is the special home of the 'Kuru-Kuru.'

For about the first half, if the collector is fortunate enough to meet with one of these birds, it is pretty certain to be one of the 'green-backed' kind, whereas higher up it is useless to look for that form. There the 'blue-backed' bird is very common. It is sometimes to be heard lower down, but the other species never ascends far. The natives call the two species by different names and know the distribution well. This morning, when searching for the 'green-backed' form, they told me that it was of no use going any further, as the 'green' birds live at the bottom of the hill, and the 'blue' birds at the top.

41. MUSOPHAGA ROSSÆ.

Musophaga rossæ Gould; Sharpe, Ibis, 1892, p. 313 (Mt. Elgon); id. Hand-l. B. ii. p. 154 (1900); id. Ibis, 1902, p. 112 (Entebbe); Reichenow, Vög. Afrikas, ii. p. 29 (1902); Jackson, Ibis, 1902, p. 628 (Entebbe).

H. 1159. ♂ ad. Ankole, March 29, 1902. Iris hazel-brown; bare skin round the eye and bill bright pale yellow; feet black.

I have seen several Plantain-eaters about here and further back in Toro, but have not been able to procure specimens. This is, I think, the common species here, as in Uganda.

42. SCHIZORHIS ZONURA.

Schizorhis zonura Rüpp.; Sharpe, Ibis, 1892, p. 314 (Turquel; Kitosh); id. Hand-l. B. ii. p. 154 (1900); id. Ibis, 1902, p. 112 (Aruma Isl., Victoria Nyanza); Jackson, Ibis, 1902, p. 629 (Entebbe: Busoga).

Chizorhis zonura Reichenow, Vög. Afrikas, ii. p. 31 (1902), iii. Nachtrag, p. 822 (1905).

H. 1179. ♂ ad. Ankole, April 6, 1902. Iris brown; bill greenish lemon-yellow; feet blackish brown.

43. GYMNOSCHIZORHIS LEOPOLDI.

Gymnoschizorhis leopoldi Shelley; Sharpe, Ibis, 1892, p. 314 (Kikuyu); id. Hand-l. B. ii. p. 154 (1900); Reichenow, Vög. Afrikas, ii. p. 37 (1902); Sharpe, Ibis, 1902, p. 112 (Ugowe Bay, Victoria Nyanza).

H. 1154. ♂ ad. Ankole, March 28, 1902. Iris deep grey.

I believe that I saw a pair of these birds on the wing at the foot of Mount Ruwenzori near Katwe. With this exception I have met with them to-day for the first time, when I came upon two little parties of three or four individuals during the course of the morning's march, in open country well covered with small flat-topped trees, the very summit of which the birds select for their coign of vantage.

H. 1160. ♀ ad. Ankole, May 29, 1902. Iris deep bluish grey; bare skin round eye and throat black; bill and feet black.

H. 1161, 1162. ♂ ad.; H. 1163. ♀ ad. Ankole, March 29, 1902.

It is a curious thing that we should have met with this bird for the first time immediately on entering Ankole, having seen nothing of it in Toro, especially as it is extremely common here. I was mistaken in thinking that it was a rather shy bird and hard to approach. This morning I must have seen fifteen or twenty specimens, and found them quite the contrary, as they sometimes sat in the trees while the whole caravan passed within twenty yards of them. Their favourite place is undoubtedly the very summit of these flat-topped trees, their white heads and breasts shewing up very conspicuously against the dark green foliage.

44. COCCYSTES JACOBINUS.

Coccystes jacobinus (Bodd.); Sharpe, Hand-l. B. ii. p. 159 (1900); Reichenow, Vög. Afrikas, ii. p. 78 (1902).

H. 1016. ♂ ad. Kangao's, Toro, March 10, 1902. Iris brown; bill black; feet dark slate-coloured. Nothing like so numerous here as at Butiaba. A very wary bird and most difficult to approach.

45. CERCOCOCCYX MECHOWI.

Cercococcyx mechowi Cab.; Sharpe, Hand-l. B. ii. p. 159 (1900); Reichenow, Vög. Afrikas, ii. p. 84 (1902).

H. 720. ♂ imm. Kibera Forest, Toro, Jan. 28, 1902. Iris brown; rim round eye lemon-yellow; bill black; lower mandible greenish horn-coloured; feet bright lemon-yellow.

[This is an immature specimen, but I can only refer it to this species. It has a great likeness to a *Hierococcyx*.—R. B. S.]

46. CUCULUS JACKSONI.

Cuculus jacksoni Sharpe, Bull. B. O. C. xiii. p. 7 (1902); Reichenow, Vög. Afrikas, ii. Nachtrag, p. 715 (1903).

No. 1119. ♂ ad. Toro, March 21, 1902. Iris brown; bill black; feet light brown, the soles white. On coming out of the forest, just as it was getting dark, I heard the continuous call of a bird in a tree some way off. I had heard this curious long-drawn-out call in the forest continually, and took it to be that of *Bias musicus*, but had never been able to make certain. On approaching the tree, I saw this bird, and thinking that it was giving vent to the sounds, I shot it, and was surprised to find it a Cuckoo, as the call was so utterly unlike that of any of the Cuckoo tribe. I did not see any bird leave the tree when I fired, but of course there may have been a *Bias musicus* present.

47. CUCULUS GULARIS.

Cuculus gularis L.; Sharpe, Hand-l. B. ii. p. 158 (1900); Reichenow, Vög. Afrikas, ii. p. 89 (1902).

H. 931. ♀ ad. Katwe, Toro, March 2, 1902. Iris yellow; rim round eye dull lemon-yellow; bill black, green at base of upper and lower mandible.

H. 972. ♀ ad. Katwe, Toro, March 6, 1902. Iris brownish yellow; bill black, the lower mandible greenish; rim round eye lemon-yellow; feet yellow. To be found everywhere.

[Although, in the dried skin, the yellow base of the bill in these specimens is not easy to distinguish, the notes given by Mr. Archer on the colour of the bill leave no doubt as to the species.—R. B. S.]

48. CUCULUS SOLITARIUS.

Cuculus solitarius Steph.; Sharpe, Ibis, 1892, p. 315 (Mt. Elgon; Lake Baringo); id. Hand-l. B. ii. p. 158 (1900); Jackson, Ibis, 1902, p. 630 (Entebbe; Kampala; E. Kamassia); Reichenow, Vög. Afrikas, ii, p. 87 (1902).

H. 882. ♀ ad. Ruwenzori, Feb. 22, 1902.

H. 930. ♂ ad. Katwe, Toro, March 2, 1902.

49. METALLOCOCCYX SMARAGDINEUS.

Chrysococcyx smaragdineus (Swains.); Sharpe, Ibis, 1892, p. 315 (Teita).

Metallococcyx smaragdineus, Sharpe, Hand-l. B. ii. p. 161 (1900); Jackson, Ibis, 1902, p. 630 (Kibwezi; Entebbe; Nandi); Reichenow, Vög. Afrikas, ii. p. 99 (1902).

H. 805. ♀ imm. Ruwenzori, Feb. 11, 1902. Bill black, base of lower mandible deep horn-blue; feet 'Cambridge'-blue.

H. 906. ♀ ad. Ruwenzori, Feb. 25, 1902. Iris brown; rim round eye 'Cambridge'-blue; bill slaty-black; feet horn-blue.

H. 907. ♂ ad. Ruwenzori, Feb. 25, 1902. Bill lightish green, blue at base; feet 'Cambridge'-blue.

50. CHRYSOCOCCYX CUPREUS.

Chrysococcyx cupreus (Bodd.); Sharpe, Ibis, 1892, p. 315 (Ukambani); id. Hand-l. B. ii. p. 161 (1900): Jackson, Ibis, 1902, p. 631 (Kibwezi; Entebbe); Reichenow, Vög. Afrikas, ii. p. 93 (1902).

H. 1132. ♂ imm. Toro, March 24, 1902. Iris dull vermilion; rim of eye coral-red; bill and feet dark brown.

H. 1178. ♂ ad. Ankole, April 6, 1902. Iris light crimson; rim of eye coral-red; bill and feet black.

51. CEUTHMOCHARES INTERMEDIUS.

Ceuthmochares intermedia Sharpe, Journ. Linn. Soc., Zool 1884, p. 432; Jackson, Ibis, 1902, p. 632 (Entebbe).

Ceuthmochares aereus, pt., Sharpe, Hand-l. B. ii. p. 172 (1900).

Ceuthmochares aereus intermedius, Reichenow, Vög. Afrikas, ii. p. 74 (1902).

H. 1120. ♀ ad. Toro Forest, March 21, 1902. Iris crimson; bill bright lemon-yellow; bare skin of eye light blue.

H. 1121, 1122. ♂ ad. Toro Forest, March 21, 1902.

52. CENTROPUS MONACHUS.

Centropus monachus Rüpp.; Sharpe, Ibis, 1892, p. 515 (Kikuyu); id. Hand-l. B. ii. p. 168 (1900); Jackson, Ibis, 1902, p. 632 (Kavirondo; Nandi); Reichenow, Vög. Afrikas, ii, p. 62 (1902).

H. 716. ♂ ad. Toro, Jan. 27, 1902. Iris crimson; bill black; feet dark slaty-grey.

53. INDICATOR INDICATOR.

Indicator indicator (Gm.); Sharpe, Ibis, 1892, p. 308 (Ukambani); id. Hand-l. B. ii. p. 176 (1900); Reichenow, Vög. Afrikas, ii. p. 104 (1902).

H. 1028. ♂ ad. Near Kangao's, Toro, March 11, 1902. Iris dirty yellow; bill horn-pink; feet slaty-grey. The first example seen in Toro.

H. 1054. ♂ ad. Kangao's, March 14, 1902. Iris brownish yellow; bill pinkish brown; feet darkish grey.

54. DENDROMUS CAROLI.

Campothera caroli Malh.; Hargitt, Cat. B. xviii. p. 107 (1890); Sharpe, Hand-l. B. ii. p. 205 (1900).

Dendromus caroli (Malh.); Reichenow, Vög. Afrikas, ii. p. 168 (1902).

H. 1108. ♂ ad. Toro Forest, March 19, 1902. Iris dull crimson; bill slaty-black; feet green.

[This seems to be the first record of the species in Equatorial Africa.—R. B. S.]

55. DENDROMUS NUBICUS.

Campothera nubica (Gm.); Sharpe, Ibis, 1892, p. 307 (Mt. Elgon); id. Hand-l. B. ii. p. 205 (1900).

Dendromus nubicus (Gm.); Jackson, Ibis, 1902, p. 637 (E. Kamassia; Eldoma Ravine); Reichenow, Vög. Afrikas, ii. p. 178 (1902).

H. 971. ♀ ad. Katwe, Toro, March 6, 1902. Iris of a squashed-strawberry colour; bill light slaty-brown; feet light green.

H. 1155. ♂. Ankole, March 29, 1902. Feet greenish grey.

H. 1164, 1165. ♀ ad. et juv. Ankole, March 31, 1902. Bill darkish slate-coloured; feet greyish green. Iris light brown in the young bird.

56. MESOPICUS CENTRALIS.

Mesopicus goertan (nec P. L. S. Müll.); Sharpe, Ibis, 1902, p. 308; Hartert, in Ansorge's Afr. Sun, App. p. 335 (1899).

Mesopicus goertæ centralis Reichenow, Orn MB. 1900, p. 59; id. Vög. Afrikas, ii. p. 187 (1902).

H. 970. ♀ ad. Katwe, Toro, March 6, 1902. Iris brown; bill slaty-black, the lower mandible bluish grey; feet greyish green.

H. 1045. ♂ ad. Kangao's, Toro, March 12, 1902. Feet French grey.

57. DENDROPICUS PŒCILOLÆMUS.

Dendromus pœcilolæmus (Reichen. & Neum.); Jackson, Ibis, 1902, p. 639 (Eldoma Ravine; Nandi).

Dendropicus pœcilolæmus Sharpe, Hand-l. B. ii. p. 218 (1900); Reichenow, Vög. Afrikas, ii. p. 196 (1902).

Dendropicus nandensis, Neum. Orn. MB. 1901, p. 184.

H. 749. ♀ ad. Katwe, Toro, Feb. 5, 1902. Iris dull crimson; bill rather pale horn-brown; feet light olive-green.

H. 1017, 1018. ♂ ♀ ad. Kangao's, Toro, March 10, 1902. Iris crimson; bill rather pale slate-coloured; feet greyish green.

[Dr. Reichenow suggests that *D. nandensis* Neum. is the young of *D. pœcilolæmus*. Of this I think there can be no question.—R. B. S.]

58. DENDROPICUS LAFRESNAYII.

Dendropicus lafresnayi Malh.; Hargitt, Cat. B. Brit. Mus. xviii. p. 293 (1890); Sharpe, Hand-l. B. ii. p. 218 (1900).

Dendropicus lafresnayei Reichenow, Vög. Afrikas, ii. p. 195 (1902).

H. 919. ♀ ad. Kangao's, Toro, Feb. 28, 1902. Iris crimson; bill rather pale slate-coloured; feet greyish green.

H. 935. ♀ ad. Open country, Toro, March 2, 1902. Iris crimson; bill slate-coloured; feet greyish green.

H. 1001. ♂ imm. Katwe, Toro, March 9, 1902. Iris brown, suffused with yellow; bill darkish slate-coloured; feet greyish green. Near this camp these birds were extremely numerous and their tapping was to be heard everywhere.

H. 1002. ♂ juv. Katwe, March 9, 1902.

59. LYBIUS ÆQUATORIALIS.

Melanobucco æquatorialis Shelley, Ibis, 1889, p. 476; Sharpe, Ibis, 1892, p. 308 (Mt. Elgon).

Melanobucco bidentatus æquatorialis Hartert, Nov. Zool. vii. p. 32 (1900: Kichuchu, Toro).

Lybius æquatorialis Sharpe, Hand-l. B. ii. p. 178 (1900); id. Ibis, 1902, p. 113 (Ruwenzori); Reichenow, Vög. Afrikas, ii. p. 119 (1902).

H. 984. ♀ ad. Katwe, Toro, March 7, 1902. Iris brown; bare skin of eye light greenish yellow; bill horn-white; feet brown.

H. 1140. ♀ ad. Toro, March 27, 1902. Soft parts as above.

60. TRICHOLÆMA ANSORGII.

Tricholæma ansorgii Shelley, Bull. B. O. C. v. p. iii (1895);

Sharpe, Hand-l. B. ii. p. 179 (1900); Reichenow, Vög. Afrikas, ii. p. 131 (1902).

H. 1078. ♀ juv. Toro, March 17, 1902.

H. 1097. ♂ ad. Toro, March 17, 1902.

[According to Dr. Reichenow (*l. c.*), the young of *T. hirsutum*, and doubtless the young of *T. ansorgii*, have a yellow-spotted head. So also has *T. flavipunctata* Verr. (*cf.* Reichenow, *t. c.* p. 131). It is to be noticed that the specimen marked by Mr. Jackson as the female of *T. ansorgii* is one of these birds with yellow-spotted heads; and if the identification is correct the question of these Barbets is much simplified, and the yellow-spotted birds would be the females or the young of the black-headed bird.—R. B. S.]

61. TRICHOLÆMA LACHRYMOSA.

Tricholæma lachrymosum Cab.; Shelley, Cat. B. Brit. Mus. xix. p. 31 (1891); Sharpe, Hand-l. B. ii. p. 180 (1900); Reichenow, Vög. Afrikas, ii. p. 132 (1902).

H. 1036. ♂ ad. Kangao's, Toro, March 11, 1902. Iris dirty white; bill black; feet dark slaty-blue. Common everywhere.

62. BARBATULA LEUCOLÆMA.

Barbatula leucolæma J. & E. Verr.; Hartert, in Ansorge's Afr. Sun, App. p. 335 (Mondo); Sharpe, Hand-l. B. ii. p. 182 (1900); Jackson, Ibis, 1902, p. 136 (Entebbe); Reichenow, Vög. Afrikas, ii. p. 147 (1902).

H. 1079. ♀ ad. Toro, March 17, 1902. Iris brown; bill and feet black. Very common indeed. Its incessant piping is to be heard all over the forest.

63. GYMNOBUCCO CINEREICEPS.

Gymnobucco cinereiceps Sharpe, Ibis, 1891, p. 122; 1892, p. 310 (Mt. Elgon); id. Hand-l. B. ii. p. 180 (1900); Reichenow, Vög. Afrikas, ii. p. 139 (1902).

H. 737. ♂ ad. Kibera Forest, Jan. 31, 1902. Iris light yellow; bristles dark and light brown; bill black; feet slaty-black.

H. 738. ♀ ad. Kibera, Feb. 1, 1902.

These birds must be fairly numerous here, since besides the specimens obtained we saw two or three others. They are hard to get, as, like other Barbets, they choose the very tops of trees, which are, in the Kibera, extremely high. I have not met with them elsewhere, and should say that they are very local.

64. HIRUNDO RUSTICA.

Hirundo rustica Linn.; Sharpe, Cat. B. x. p. 128 (1885); id. Hand-l. B. iii. p. 192 (1901); Reichenow, Vög. Afrikas, ii. p. 406 (1903).

H. 727. ♀ juv. Kibera, Jan. 30, 1902. Iris brown; bill black; feet sepia-brown. Some thirty or forty of these little birds were sitting in a small tree in the elephant-grass at four o'clock in the afternoon.

H. 1135. ♂ ad. Toro, March 24, 1902.

65. HIRUNDO PUELLA.

Hirundo puella Temm. & Schl.; Jackson, Ibis, 1901, p. 96 (Entebbe); Sharpe, Hand-l. B. iii. p. 196 (1901); Reichenow, Vög. Afrikas, ii. p. 413 (1903).

H. 916. ♂ ad. Kangao's, Toro, Feb. 28, 1902.
H. 917. ♀ ad. " " "

66. HIRUNDO SENEGALENSIS.

Hirundo senegalensis Linn.; Sharpe, Ibis, 1892, p. 305 (Uganda); Hartert, in Ansorge's Afr. Sun, App. p. 337 (1899) (Unyoro); Jackson, Ibis, 1901, p. 96 (Kamassia; Eldoma Ravine; Nandi); Sharpe, Hand-l. B. iii. p. 137 (1901); Reichenow, Vög. Afrikas, ii. p. 415 (1903).

H. 1062, 1063. ♂ ♀ ad. Kangao's, Toro, March 16, 1902. Just before a storm broke I saw quite a dozen of these birds sailing about amongst a number of the Great Swifts and the little long-winged Palm-Swifts.

67. PSALIDOPROCNE ALBICEPS.

Psalidoprocne albiceps Scl.; Sharpe, Ibis, 1892, p. 306 (Ukambani); Sharpe, Hand-l. B. iii. p. 203 (1901); Reichenow, Vög. Afrikas, ii. p. 430 (1903).

H. 1034. ♂ ad. Kangao's, Toro, March 2, 1902. Iris brown; bill black; feet dark sepia-brown. Very common. Always to be found flying about the open places in the copses.

68. ALSEONAX LUGENS.

Muscicapa lugens (Hartl.); Sharpe, Cat. B. Brit. Mus. iv. p. 155 (1879); id. Hand-l. B. iii. p. 212 (1901).

Alseonax lugens Reichenow, Vög. Afrikas, ii. p. 453 (1903).

H. 1101. ♂ ad. Toro, March 19, 1902. Iris brown; bill black; feet dark slaty-blue.

[This specimen agrees with the type of *Butalis lugens* from Bembe in Angola.—R. B. S.]

69. ALSEONAX MELANOPTERA.

Alseonax melanoptera Jackson, Bull. B. O. C. xvi. p. 89 (1906).

[No number.] ♀. Toro, March 19, 1902.

This specimen appears to belong to a different species from the preceding. Its principal characters consist of its black wings and its white breast, abdomen, and under tail-coverts.

70. MELÆNORNIS EDOLIOIDES.

Melænornis edolioides (Sw.); Sharpe, Hand-l. B. iii. p. 207 (1901); Jackson, Ibis, 1901, p. 51 (Nandi).

Melænornis pammelæna (Stanley); Reichenow, Vög. Afrikas, ii. p. 441 (1903).

H. 961. ♀ ad. Katwe, Toro, March 6, 1902. Iris hazel-brown; bill and feet black. Common at Katwe.

H. 962. ♂ ad. Katwe, March 6, 1902.

H. 1007. ♀ ad. Katwe, March 9, 1902.

71. STIZORHINA VULPINA.

Cassinia fraseri (nec Strickl.); Hartert, Nov. Zool. vii. p. 36 (1900: Olinga).

Stizorhina vulpina Reichenow, J. f. O. 1902, p. 125; id. Vög. Afrikas, ii. p. 467 (1903).

H. 1099. ♂ ad. Toro Forest, March 19, 1902. Iris brown; bill black; feet brownish flesh-coloured.

72. MUSCICAPA COLLARIS.

Hedymela collaris Sharpe, Hand-l. B. iii. p. 213 (1901).

Muscicapa collaris Reichenow, Vög. Afrikas, ii. p. 451 (1903).

H. 946. ♀ ad. Katwe, March 3, 1902. Iris brown bill and feet deep black. I fancy that I saw this species at Butiaba.

H. 988. ♀ ad. Katwe, Toro, Feb. 7, 1902.

[These specimens shew white near the bases of both webs of the inner primaries, and are apparently hens of *M. collaris*, which is now recorded from Equatorial Africa for the first time.—R. B. S.]

73. Pogonocichla orientalis.

Tarsiger orientalis Fischer & Reichenow; Sharpe, Ibis, 1892, p. 302 (Kikuyu; Mount Elgon); Sharpe, P. Z. S. 1900, p. 608 (W. slope of Mt. Kenya); id. Hand-l. B. iii. p. 239 (1901); Jackson, Ibis, 1901, p. 94 (Mau; Eldoma Ravine); Reichenow, Vög. Afrikas, iii. p. 778 (1905).

Tarsiger stellatus orientalis Hartert, in Ansorge's Afr. Sun, App. p. 338 (1899: Mau).

H. 754. ♂ ad. Ruwenzori, Feb. 8, 1902. Iris hazel-brown; bill black; feet greenish brown. Shot in thick bush, the only example seen up to this date. This proved to be a common bird up the mountain.

H. 762. ♂ ad. Ruwenzori, Feb. 9, 1902. Iris hazel-brown; bill black; feet rather light olive-brown.

H. 803. ♂ juv. Ruwenzori, Feb. 11, 1902. Iris brown; bill brown, with the base of the lower mandible yellow; feet light greenish brown; toes yellowish. Found creeping about in the dense undergrowth.

H. 816. ♂ juv. Ruwenzori, Feb. 12, 1902. Feet greenish brown; toes yellowish green.

H. 819. ♂ ad. Ruwenzori, Feb. 12, 1902. Iris hazel-brown; bill black; feet greenish brown.

H. 840. ♂ ad. Ruwenzori, Feb. 13, 1902. Iris brown; bill black; feet greyish brown. These birds seem to be fairly common, or it may be that, owing to their bright plumage, they are very conspicuous, as compared with some of the more sombre species.

H. 894, 899. ♂ ad. et juv. Ruwenzori, Feb. 23, 1902. Iris greyish brown; bill brown, the lower mandible yellow; feet yellow.

H. 911. ♂ ad. Ruwenzori, Feb. 26, 1902.

74. BATIS DIOPS.

Batis diops Jackson, Bull. B. O. C. xv. p. 38 (1905); Reichenow, Vög. Afrikas, iii. Nachtrag, p. 831 (1905).

H. 769. ♀ ad. Ruwenzori, Feb. 9, 1902. Iris golden-yellow; bill black; feet darkish slaty-grey.

H. 789. ♂ ad. Ruwenzori, Feb. 10, 1902. Iris golden-yellow; bill and feet black. Found everywhere.

H. 839. ♂ ad. Ruwenzori, Feb. 13, 1902. Iris golden-yellow; bill and feet black.

[The bird marked "female" is the type of the species. If correctly sexed, it is curious to note that it is exactly like the male, and has a white throat and abdomen, and a broad black breast-band. *B. diops* differs from *B. minta* in being much blacker, especially on the head and wings; the primaries are almost entirely black without grey edgings, and the head also is blacker and not so grey. The two spots at the base of the forehead are also characteristic of *B. diops*.—R. B. S.]

75. DIAPHOROPHYIA LEUCOPYGIALIS.

Diaphorophyia castanea (Fraser); Sharpe, Hand-l. B. iii. p. 245 (1901); Reichenow, Vög. Afrikas, ii. p. 490 (1903).

H. 729. ♂ ad. Kibera, Toro, Jan. 30, 1902. Rim round eye light purple; bill black; feet light purple.

H. 740. ♂ ad. Kibera, Feb. 1, 1902.

76. PLATYSTIRA NYANZÆ.

Platystira albifrons (nec Sharpe); Jackson, Ibis, 1901, p. 90 (Entebbe).

Platystira cyanea nyanzæ Neumann, J. f. O. 1905, p. 210; Reichenow, Vög. Afrikas, iii. p. 832 (1905).

Platystira cyanea (nec P. L. S. Müll.); Hartert, in Ansorge's Afr. Sun, App. p. 338 (1899: Unyoro); id. Nov. Zool. vii. p. 36 (1900: Toro).

H. 1030. ♂ ad. Kangao's, Toro, March 11, 1902. Iris bluish grey; wattle over eye scarlet; bill and feet black.

77. Bias femininus.

Bias musicus (nec V.); Hartert, Nov. Zool. vii. p. 36 (1900: Ituri River); Jackson, Ibis, 1901, p. 92 (Entebbe).

Bias feminina Jackson, Bull. B. O. C. xvi. p. 87 (May 1906).

H. 1074. ♂ ad. Toro, Feb. 17, 1902. Iris brightest lemon-yellow; bill black; feet lemon-yellow. The first specimen that we have met with in Toro.

H. 1075. ♀ ad. Toro, Feb. 17, 1902.

[As Mr. Jackson has pointed out, the male of this species does not differ greatly from that of *B. musicus*, but is more of an oily-greenish black on the back and throat. The female, however, is easily recognisable from that of *B. musicus* by its light cinnamomeous upper surface.—R. B. S.]

78. Megabias æquatorialis.

Megabias æquatorialis Jackson, Bull. B. O. C. xv. p. 11 (1904).

Megabias atrialatus æquatorialis Reichenow, Vög. Afrikas, iii. Nachtrag, p. 831 (1905).

H. 1128. ♀ ad. Toro, March 22, 1902. Iris reddish yellow; bill black; feet heliotrope-coloured.

79. Trochocercus albonotatus.

Trochocercus albonotatus Sharpe, Ibis, 1891, p. 121; 1892, p. 303, pl. vii. fig. 1; id. Hand-l. B. iii. p. 251 (1901); Jackson, Ibis, 1901, p. 92 (Mau Forest; Eldoma Ravine; Nandi).

H. 767, 768. ♂ ♀ ad. Ruwenzori, Feb. 9, 1902. Iris brown; bill black; feet blackish brown.

These birds seem partial to the very tops of the trees, and are conspicuous from the white on their tail-feathers, which are nearly always spread out. They are pretty common here. Their twittering is very similar to that of the Goldcrest at home. Throughout the forest of Ruwenzori this is, perhaps, the commonest bird, with the exception of the Uganda White-eye.

80. TCHITREA SUAHELICA.

Tchitrea perspicillata (nec Sw.); Hartert, in Ansorge's Afr. Sun, App. p. 338 (1899: Toro Desert; First Kedong R.).

Tchitrea perspicillata suahelica Reichenow, Vög. Afrikas, ii. p. 509 (1903).

H. 990. ♀ ad. Katwe, Toro, March 7, 1902. Rim round eye deep blue, as well as the bill and feet.

81. TCHITREA EMINI.

Terpsiphone emini Reichenow, Orn. M.B. i. p. 31 (1893); Sharpe, Hand-l. B. iii. p. 265 (1901).

Tchitrea emini Reichenow, Vög. Afrikas, ii. p. 512 (1903).

H. 1072. ♂ ad. Toro, March 16, 1902. Iris brown; rim of eye and bill bright blue; feet duller blue.

H. 1091. ♀ ad. Toro, March 17, 1902. Iris brown; rim of eye, bill, and feet all rather deep blue. Common in the forest.

H. 1097. ♀ ad. Toro Forest, March 19, 1902. Iris hazel-brown; rim round eye, bill, and feet dark blue. Undoubtedly the common Paradise-Flycatcher of the Toro Forest.

H. 1098. ♂ juv. Toro, March, 19, 1902.

82. ELMINIA LONGICAUDA.

Elminia teresita Antin.; Sharpe, Ibis, 1892, p. 301 (Mt. Elgon); Hartert, in Ansorge's Afr. Sun, App. p. 399 (1890: Unyoro; Uganda); Sharpe, Hand-l. B. iii. p. 266 (1901).

Elminia longicauda (Sw.); Jackson, Ibis, 1901, p. 93 (Entebbe; Kavirondo; Nandi); Reichenow, Vög. Afrikas, ii. p. 496 (1903).

H. 1037, 1038. ♂ ♀. Kangao's, Toro, March 12, 1902. The first specimens I have met with.

83. CRYPTOLOPHA LÆTA.

Cryptolopha læta Sharpe, Bull. B. O. C. xiii. p. 9 (1902); Reichenow, Vög. Afrikas, ii. Nachtr. p. 723 (1903).

H. 784. ♂ ad. Ruwenzori, Feb. 10, 1902. Iris hazel-brown; bill dark brown, lower mandible yellowish; feet slaty-grey; toes horn-blue.

H. 785. ♂ ad. Ruwenzori, Feb. 10, 1902. Feet tinged with green.

H. 807. ♂ ad. Ruwenzori, Feb. 11, 1902. Iris brown; bill brown, the lower mandible yellowish; feet light greyish green. Type of the species.

H. 825. ♂ ad. Ruwenzori, Feb. 12, 1902. Iris hazel-brown; bill brown, lower mandible yellow: feet greyish green.

H. 875. ♀ ad. Ruwenzori, Feb. 21, 1902.

84. GRAUCALUS PURUS.

Graucalus purus Sharpe, Ibis, 1891, pp. 121, 199; 1892, p. 299 (Mount Elgon); id. P. Z. S. 1900, p. 608 (Nairobi to Mt. Kenya); Neum. J. f. O. 1900, p. 261 (Kikuyu); Jackson, Ibis, 1901, p. 85 (Eldoma Ravine; Mau Plateau; Nandi); Sharpe, Hand-l. B. iii. p. 291 (1901).

Coracina pura Reichenow, Vög. Afrikas, ii. p. 515 (1903).

Coracina cæsia pura Neumann, J. f. O. 1905, p. 213 (Malo; Kaffa).

H. 758, 759. ♂ ♀ ad. Ruwenzori, Feb. 9, 1902. Iris brown; bill black; feet blackish brown, much scored with white.

85. CAMPOPHAGA NIGRA.

Campophaga nigra (Vieill.); Hartert, in Ansorge's Afr. Sun, App. p. 339 (1899: Nandi; Ukamba); Neum. J. f. O. 1900, p. 261 (Kikumbuliu; Kilimanjaro); Jackson, Ibis, 1901, p. 87 (Teita; Eldoma Ravine; Nandi); Sharpe, Hand-l. B. iii. p. 298 (1901); Reichenow, Vög. Afrikas, ii. p. 518 (1903).

H. 1173. ♀ ad. Ankole, April 4, 1902. Iris brown; bill and feet black.

86. BLEDA LEUCOLÆMA.

Bleda leucolæma Sharpe, Bull. B. O. C. xiii. p. 10 (1902).

Phyllastrephus albigularis (Sharpe); Reichenow, Vög. Afrikas, iii. p. 400 (1904).

H. 1104. ♂. Toro Forest, March 19, 1902.

H. 1113. ♂ ad. Toro Forest, March 20, 1902. Iris dirty grey; bill blackish brown; feet light blue.

H. 1118. ♀ ad. Toro Forest, March 21, 1902. Iris dirty grey; bill dark brown; feet light slaty-blue.

[Professor Reichenow has united this species with *B. albigularis* (Sharpe, Cat. B. Brit. Mus. vi. p. 103, pl. vii., 1881), and I must confess that the two are very much alike. I think, however, that the Toro birds are larger (wing 3·0–3·4), whereas the type of *B. albigularis* has a wing of 2·7 only.—R. B. S.]

87. BLEDA KIKUYUENSIS.

Xenocichla kikuyuensis Sharpe, Ibis, 1891, p. 118 (Kikuyu); 1892, p. 299 (Sotik); id. P. Z. S. 1900, p. 608 (W. slope of Mt. Kenya); Neum. J. f. O. 1900, p. 292 (Mau Forest); Jackson, Ibis, 1901, p. 82 (Eldoma Ravine).

Bleda kikuyuensis Sharpe, Hand-l. B. iii. p. 321 (1901).

H. 770. ♀ ad. Ruwenzori, Feb. 9, 1902. Iris brownish brick-red; bill black; feet light olive-green. Extremely common.

H. 771. ♂ ad. Ruwenzori, Feb. 9, 1902. Soft parts as in the female.

88. BLEDA INDICATOR.

Bleda indicator (Verr.); Sharpe, Hand-l. B. iii. p. 322 (1901).

Phyllastrephus indicator Reichenow, Vög. Afrikas, iii. p. 390 (1904).

[No number.] ♂ ad. Kibera, Toro, Jan. 31, 1902.

H. 734. ♂ ad. Kibera, Jan. 31, 1902. Iris *chalky-white*; bill black; feet slaty-black.

H. 735. ♀ ad. Kibera, Jan. 31, 1902. Iris light coffee-brown; bill black; feet slaty-black.

Baraka tells me that these two birds were found together in a tall tree, uttering a loud call-note. On shooting the female, the male at once flew away, but returned immediately afterwards to the same tree—whence he concludes that they were a pair. He noted the difference in the colour of the iris directly he shot them.

89. EURILLAS EUGENIUS.

Andropadus eugenius Hartert, in Ansorge's Afr. Sun, App. p. 349 (1899: Eldoma Ravine); Jackson, Ibis, 1901, p. 84 (Eldoma Ravine; Kakamega; Nandi); Hartert, Nov. Zool. 1900, p. 47 (Ituri Forest).

Andropadus latirostris eugenius Reichenow; Neum. J. f. O. 1900, p. 292; Reichenow, Vög. Afrikas, iii. p. 415 (1904).

Eurillas eugenius Sharpe, Hand-l. B. iii. p. 325 (1901); id. Ibis, 1902, p. 114 (Mpanga Forest).

H. 719. ♀ ad. Kibera Forest, Toro, Jan. 28, 1902. Iris brown; bill dark brown; feet yellow-ochre.

H. 818. ♂ ad. Ruwenzori, Feb. 12, 1902. Iris hazel-brown; bill black; feet light ochre-yellow. The first example that we have come across on Ruwenzori. In the Kibera Forest, near Fort Portal, these birds were plentiful.

90. EURILLAS VIRENS.

Andropadus virens Cass.; Hartert, Nov. Zool. vii. p. 48 (1900: Ituri Forest); Neum. J. f. O. 1900, p. 291 (Muansa); Jackson, Ibis, 1901, p. 84 (Entebbe; Nandi); Reichenow, Vög. Afrikas, iii. p. 412 (1904).

Eurillas virens Sharpe, Hand-l. B. iii. p. 324 (1901).

H. 1085. ♂ ad. Toro, March 17, 1902.

91. ANDROPADUS CURVIROSTRIS.

Andropadus curvirostris Cass.; Sharpe, Hand-l. B. iii. p. 323 (1901); Reichenow, Vög. Afrikas, iii. p. 413 (1904).

H. 1105. ♂ ad. Toro, March 19, 1902. Iris deep yellow-ochre; bill blackish brown; feet brown, tinged with yellow-ochre.

92. STELGIDILLAS GRACILIROSTRIS.

Chlorocichla gracilirostris (Strickl.); Jackson, Ibis, 1901, p. 83 (Nandi).

Andropadus gracilirostris Neum. J. f. O. 1900, p. 292 (Kikuyu).

Stelgidillas gracilirostris Sharpe, Hand-l. B. iii. p. 326 (1901).

H. 742. ♂ ad. Kibera Forest, Toro, Feb. 1, 1902. Iris strawberry-red; bill black; feet brownish black.

93. PHYLLOSTREPHUS SUCOSUS.

Phyllastrephus cabanisi sucosus Reichenow, J. f. O. 1903 p. 544; id. Vög. Afrikas, iii. p. 401 (1904).

H. 718. ♂ ad. Toro, Jan. 7, 1902. Iris stone-grey; bill blackish brown; feet French grey.

H. 732, 733. ♀ ad. Kibera Forest, Toro, Jan. 31, 1902. Iris light coffee-coloured; bill blackish brown; feet light horn-blue.

94. CRATEROPUS SHARPII.

Crateropus sharpei Reichenow; Neum. J. f. O. 1900, p. 302; Hartert, Nov. Zool. vii. p. 49 (1900: Toro); Jackson, Ibis, 1901, p. 79 (Ntebi; Nandi); Sharpe, Hand-l. B. iv. p. 22 (1903): id. Ibis, 1902, p. 114 (W. Ankole); Neum. J. f. O. 1904, p. 551.

Crateropus melanops sharpei Reichenow, Vög. Afrikas, iii. p. 661 (1905).

H. 950. ♂ ad. Katwe, Toro, March 4, 1902. Iris white; bill black; feet brown.

95. TURDINUS ATRICEPS.

Turdinus atriceps Sharpe, Bull. B. O. C. xiii. p. 10 (1902); id. Hand-l. B. iv. p. 35 (1903); Reichenow, Vög. Afrikas, iii. p. 740 (1905).

H. 753. ♀ ad. Ruwenzori, Feb. 8, 1902. Iris brown; bill dark brown, the lower mandible horn-blue.

H. 823, 824. ♂ ad. et imm. Ruwenzori, Feb. 12, 1902. Iris hazel-brown; bill blackish brown, the lower mandible horn-blue; feet bright horn-blue. Near the water these birds are common, but they appear not to go further into the forest.

No. 852. ♂ imm. Ruwenzori, Feb. 14, 1902. Iris hazel-brown; bill black, lower mandible horn-coloured. Common. Type of the species.

[The female and one of the males, probably immature, have browner heads. The old birds have black heads and throats, but in those which I suppose to be young the crown is shaded with brown, and the throat is slaty-grey mottled with black.

This species seems to me out of place in the genus *Turdinus*, and would be better placed in the genus *Alcippe*, as arranged by Dr. Reichenow in his 'Vögel Afrikas' (iii. p. 740). It differs from *A. abyssinica* in its darker and more rufous-brown upper surface, darker slaty-grey under surface, and black head and throat. *A. atriceps* appears to be of the same tint above as *A. stierlingi* Reichenow (*t. c.* p. 741), but has not the white streaks on the throat.

If *A. monachus* Reichenow differs from *A. abyssinica* only in the more reddish-brown tint of the back, and has the same extent of grey, then *A. claudi* of Alexander is undoubtedly a distinct species from both of them, as the grey of the head extends over the interscapulary region.—R. B. S.]

96. BATHMEDONIA JACKSONI.

Bathmocercus jacksoni Sharpe, Bull. B. O. C. xiii. p. 10 (1902); id. Hand-l. B. iv. p. 35 (1903).

Bathmedonia rufa (pt.) Reichenow, Vög. Afrikas, iii. p. 742 (1905).

H. 730. ♂ ad. The Kibera, Jan. 30, 1902. Bill black; feet light slaty-blue. Type of the species. This little bird, with three or four others, was picking about on the ground in thick bush.

[Mr. Jackson has three specimens of this bird from Kericho in Lumbwa—two males and a female. They agree with the type of my *Bathmocercus jacksoni* in having a shade of light cinnamon skirting the black throat and fore-neck, and separating the black from the chestnut of the back. The female has a very distinct creamy-buff circlet round the black fore-neck. This light shade is not shown in either sex of the true *B. rufa* from the Camaroons, and I therefore consider *B. jacksoni* to be distinct from that species. Dr. Reichenow has united them (Vög. Afrikas, iii. p. 742), but I think that they will have to be kept separate. *B. fuscipennis* Sharpe is certainly only a young male of *B. rufa*.—R. B. S.]

97. MERULA CENTRALIS.

Turdus pelios saturatus (nec Cab.); Hartert, Nov. Zool,

vii. p. 53 (1900: Bussiro; Uganda; Toro; Lake Albert Edward).

Turdus pelios (nec Bp.); Jackson, Ibis, 1901, p. 73 (Busoga; Entebbe).

Turdus bocagei (nec Cab.); Sharpe, Ibis, 1902, p. 114 (N. Ankole).

Merula pelios (pt.) Sharpe, Hand-l. B. iv. p. 128.

Turdus pelios centralis Reichenow, Vög. Afrikas, iii. p. 690 (1905).

H. 1125. ♀ ad. Toro, March 22, 1902. Iris brown, rim of eye yellow; bill yellow; feet pale dirty yellow.

98. Merula baraka.

Merula baraka Sharpe, Bull. B. O. C. xiv. p. 19 (1903).

Turdus baraka Reichenow, Vög. Afrikas, iii. p. 687 (1905).

H. 865. ♀ ad. Ruwenzori, Feb. 18, 1902. Iris brown, rim round eye yellow; bill bright orange; feet bright yellow.

H. 896. ♂; 897, 898. ♀ ad. Ruwenzori, Feb. 23, 1902.

A somewhat rare bird, I think. I have not seen a specimen myself, Baraka having obtained all the four so far met with.

[*M. baraka* seems to be distinct enough from *M. elgonensis*, being darker and having an olivaceous shade over the upper surface, as well as on the throat and fore-neck. It appears, however, to be very close to, if not identical with, *M. abyssinica*. The specimens which I identified in 'The Ibis' for 1902, p. 114, from Entebbe, as *M. elgonensis*, now seem to me to be quite distinct, being very dark slaty-brown both above and on the throat and fore-neck, and vinous chestnut on the abdomen and flanks. I propose to call this Thrush *Merula johnstoni*, n. sp.—R. B. S.]

99. Geocichla piaggiæ.

Turdus piaggiæ Bouvier, Bull. Soc. Zool. France, 1877, p. 456.

Geocichla piaggiæ Sharpe, P. Z. S. 1900, p. 606; Jackson, Ibis, 1901, p. 73; Reichenow, Vög. Afrikas, iii. p. 683 (1905).

H. 814. ♂ ad. Ruwenzori, Feb. 12, 1902. Iris brown;

bill black; feet light fleshy-brown. The first specimen seen up to the present.

100. COSSYPHA HEUGLINI.

Cossypha heuglini Hartl.; Jackson, Ibis, 1901, p. 72 (Eldoma Ravine; Nandi); Hartert, Nov. Zool. vii. p. 52 (1900: Toro); Sharpe, Ibis, 1902, p. 114 (W. Uganda; Lake Baringo); id. Hand-l. B. iv. p. 164 (1903); Reichenow, Vög. Afrikas, iii. p. 758 (1905).

H. 987. ♂ juv. Katwe, Toro, March 7, 1902. Iris brown; bill dark slaty-brown; feet brown, tinged with grey.

H. 998. ♂ ad. Katwe, Toro, March 8, 1902.

101. COSSYPHA ARCHERI.

Cossypha archeri Sharpe, Bull. B. O. C. xiii. p. 9 (1902); id. Hand-l. B. iv. p. 163 (1903); Reichenow, Vög. Afrikas, iii. p. 755 (1905).

H. 878. ♂ ad. Ruwenzori, Feb. 20, 1902. Iris hazel-brown; bill black; feet sepia-brown. The only example seen. Type of the species.

[This species seems to be quite distinct from *C. polioptera* and *C. bocagei*, having the crown like the back, and not grey. The upper surface is of a dull chestnut-brown, the upper tail-coverts and tail are more distinctly chestnut, and the head is a trifle browner. The ear-coverts are also chestnut-brown, not orange as in the two species mentioned, and the fore parts of the cheeks and sides of the chin are dusky brown, while the under surface of the body is deep orange-chestnut, not orange as in *C. polioptera*.—R. B. S.]

102. ALETHE POLIOPHRYS.

Alethe poliophrys Sharpe, Bull. B. O. C. xiii. p. 10 (1902); Reichenow, Vög. Afrikas, iii. p. 749 (1905).

H. 801. ♀ ad. Ruwenzori, Feb. 11, 1902. Iris reddish brown; bill black; feet pinkish white. "Bush-bird."

H. 802. ♂ ad. Ruwenzori, Feb. 11, 1902. Iris brown; bill black; feet fleshy-white. The only specimens seen up to this date.

H. 815. ♀ ad. Ruwenzori, Feb. 12, 1902. Iris ruddy-brown; bill black; feet fleshy-white. This is the type on which the species was founded.

H. 854. ♀ ad. Ruwenzori, Feb. 14, 1902. Iris hazel-brown.

H. 877. ♂ ad. Ruwenzori, Feb. 21, 1902.

Young birds are spotted, as is usual in the genus *Alethe*. There is no black on the crown, the feathers being streaked with rufous-buff, more narrowly than on the mantle, where the feathers are rufous-buff with black edges. The throat and breast are ochraceous-buff, with black margins to the feathers, producing a mottled appearance.

103. PRATINCOLA RUBETRA.

Pratincola rubetra (L.); Hartert, in Ansorge's Afr. Sun, App. p. 354 (1899: Unyoro; Uganda); id. Nov. Zool. vii. p. 52 (1900: Uganda); Neum. J. f. O. 1900, p. 312 (N. Kavirondo); Sharpe, Hand-l. B. iv. p. 171 (1903); Reichenow, Vög. Afrikas, iii. p. 731 (1905).

H. 1053. ♀ ad. Kangao's, Toro, March 14, 1902. Iris brown; bill and feet black.

104. CISTICOLA CHUBBI.

Cisticola chubbi Sharpe, Ibis, 1892, p. 157 (Mt. Elgon); Jackson, Ibis, 1901, p. 62 (Nandi); Reichenow, Vög. Afrikas, iii. p. 561 (1905).

H. 856. ♀ ad. Ruwenzori, Feb. 15, 1902. Iris deep yellow-ochre; bill black; feet dark flesh-coloured.

[I have referred this specimen to *C. chubbi*, but it seems to be a little darker than the rest of our series.—R. B. S.]

105. SCHŒNICOLA APICALIS.

Schœnicola apicalis (Cab.); Jackson, Ibis, 1901, p. 55 (Nandi; Kakamega); Reichenow, Vög. Afrikas, iii. p. 577 (1905).

H. 1146. ♂ ad. Toro, March 27, 1902. Iris greyish brown; bill blackish brown; feet brownish flesh-coloured.

106. BRADYPTERUS CINNAMOMEUS.

Bradypterus cinnamomeus (Rüpp.); Sharpe, Ibis, 1892,

p. 154 (Kikuyu); id. P. Z. S. 1900, p. 607 (Settima Mts.); Reichenow, Vög. Afrikas, iii. p. 581 (1905).

H. 895. ♂ ad. Ruwenzori, Feb. 23, 1902. Iris brown; bill black, the lower mandible horn-blue; feet white, with a brownish tinge.

107. BRADYPTERUS BARAKÆ, nom. nov.

Phlexis rufescens Sharpe, Bull. B. O. C. xiii. p. 9 (1902).

Cryptillas rufescens Sharpe, Hand-l. B. iv. p. 203 (1903).

Bradypterus rufescens Reichenow, Vög. Afrikas, iii. p. 580 (1905).

H. 872. ♂ ad. Ruwenzori, Feb. 20, 1902. Iris pale brown; bill black; feet sepia-brown. The first example seen.

[Dr. Reichenow's *B. castaneus*, from the Camaroons, and *B. barakæ* must be very closely allied, but the former has the middle of the throat white, according to the description.

I must change the name of *B. rufescens*, as I had overlooked the fact that in 1876 I described a *Bradypterus rufescens* from the Lower Congo (*cf.* Sharpe and Bouvier, Bull. Soc. Zool. France, 1876, p. 307), so I propose that of *B. barakæ* for the Ruwenzori bird.—R. B. S.]

108. PHYLLOSCOPUS TROCHILUS.

Phyllostrophus trochilus (Linn.); Hartert, in Ansorge's Afr. Sun, App. p. 354 (1899: Eldoma Ravine); Sharpe, Ibis, 1892, p. 153 (Machakos); Hinde, Ibis, 1900, p. 497 (N'gong); Jackson, Ibis, 1901, p. 52 (Teita; Eldoma Ravine; Entebbe; Kavirondo); Sharpe, Hand-l. B. iv. p. 213 (1903); Reichenow, Vög. Afrikas, iii. p. 644 (1905).

H. 945. ♂ ad. Katwe, Toro, March 3, 1902. Iris brown; bill brown; feet brownish green; toes yellowish. Found in thick undergrowth.

109. APALIS PORPHYROLÆMA.

Apalis porphyrolæma Reichen. & Neum.; Neum. J. f. O. 1900, p. 307 (Eldoma Ravine); Jackson, Ibis, 1901, p. 67 (Eldoma Ravine; Nandi); Sharpe, Hand-l. B. iv. p. 223 (1903); Reichenow, Vög. Afrikas, iii. p. 605 (1905).

H. 828. ♂ ad. Ruwenzori, Feb. 12, 1902. Iris dirty-yellow; bill blackish brown; feet deep yellowish flesh-coloured. The only specimen that we have met with.

110. Apalis ruwenzorii.

Apalis ruwenzori Jackson, Bull. B. O. C. xv. p. 11 (1904); Reichenow, Vög. Afrikas, iii. p. 606 (1905).

H. 778, 779. ♂ ♀. Ruwenzori, Feb. 10, 1902. Iris brownish yellow-ochre; bill black; feet flesh-coloured.

H. 827. ♀. Ruwenzori, Feb. 12, 1902. Iris yellow-ochre; bill black; feet brownish flesh-coloured. Common.

[The female resembles the male, but has the grey throat-band a little narrower. The cinnamon colour on the cheeks and throat and the grey band across the fore-neck distinguish this species from *A. pulchra*.—R. B. S.]

111. Apalis personata.

Apalis personata Sharpe, Bull. B. O. C. xiii. p. 9 (1902); Reichenow, Vög. Afrikas, iii. p. 608.

H. 787. ♂ ad. Ruwenzori, Feb. 20, 1902. Iris deep yellow-ochre; bill black; feet flesh-coloured. These birds are common here, I think; five or six were seen this morning.

H. 788. ♀ ad. Ruwenzori, Feb. 10, 1902.

H. 868. ♂ ad. Ruwenzori, Feb. 11, 1902. Iris deep yellow-ochre; bill black; feet brownish flesh-coloured. Common.

H. 873. ♂ ad. Ruwenzori, Feb. 21, 1902. Iris yellow-ochre; bill black; feet brownish flesh-coloured.

112. Eminia lepida.

Eminia lepida Hartl.; Neum. J. f. O. 1900, p. 308 (Kavirondo); Jackson, Ibis, 1901, p. 68 (Entebbe; Nandi); Sharpe, Hand-l. B. iv. p. 223 (1903); Reichenow, Vög. Afrikas, iii. p. 613 (1905).

H. 1031, 1032. ♂ ♀. Kangao's, Toro, March 11, 1902. Iris yellow-ochre; bill black; feet light flesh-coloured. The first example seen.

113. Euprinodes nigrescens.

Euprinodes nigrescens Jackson, Bull. B. O. C. xvi. p. 90 (1906).

H. 1082. ♀ ad. Ruwenzori, April 8, 1902.

[This species is allied to *E. cinerea*, but differs in its blacker upper surface, the sides of the face being also blackish like the head. The crown is of the same smoky-black colour as the back. *E. nigrescens* has three pure white outer tail-feathers, but in *E. cinerea* the outer tail-feathers have dusky bases and the crown differs in colour from the back. The new form may be allied to *E. melanocephala* Fischer & Reichen. (*cf.* Reichenow, Vög. Afrikas, vol. iii. p. 604, pl. xxii.), but the outer tail-feathers are not entirely white, but are blackish with white tips.—R. B. S.]

114. PHYLLOLAIS PULCHELLA.

Apalis pulchella (Cretzschm.); Reichenow, Vög. Afrikas, iii. p. 610 (1905).

Phyllolais pulchella Sharpe, Hand-l. B. iv. p. 226 (1903).

H. 963. ♂ ad. Katwe, Toro, March 6, 1902. Iris yellow-ochre; bill lightish brown; feet fleshy-yellow.

115. SYLVIELLA JACKSONI.

Sylviella jacksoni Sharpe, Bull. B. O. C. vii. p. vii (1897); Neum. J. f. O. 1900, p. 305 (Kavirondo); Jackson, Ibis, 1901, p. 69 (Kibwesi); Sharpe, Hand-l. B. iv. p. 227 (1903).

Sylvietta jacksoni Reichenow, Vög. Afrikas, iii. p. 627 (1905).

H. 947. ♀ ad. Katwe, Toro, March 3, 1902. Iris yellow-ochre; bill brown; feet fleshy-brown. Very numerous up Ruwenzori.

H. 1039. ♀ ad. Kangao's, Toro, March 12, 1902. Iris yellow-ochre; bill brown; feet brownish flesh-coloured. The nest of this bird was very similar to that of the Sun-birds. It contained two eggs.

116. SYLVIELLA TOROENSIS.

Sylviella toroensis Jackson, Bull. B. O. C. xv. p. 38 (1905).

Sylvietta toroensis Reichenow, Vög. Afrikas, iii. p. 632 (1905).

H. 731. ♀ ad. Kibera River, Jan. 31, 1902. Iris coffee-brown; bill dark brown; feet greyish brown.

117. SYLVIELLA LEUCOPHRYS.

Sylviella leucophrys Sharpe, Ibis, 1891, pp. 120, 159 (Mt. Elgon); Jackson, Ibis, 1901, p. 70 (Nandi).

Sylvietta leucophrys Reichenow, Vög. Afrikas, iii. p. 631 (1905).

H. 777. ♀ ad. Ruwenzori, Feb. 10, 1902. Iris brick-red; bill light brown with pinkish tinge; feet brownish flesh-coloured.

H. 786. ♂ ad. Ruwenzori, Feb. 10, 1902. Iris crimson; bill pinkish brown; feet deep flesh-coloured.

These birds are distinctly common; they are generally found amongst the tall creepers and the undergrowth which envelops the stems of the trees.

118. CAMAROPTERA GRISEIVIRIDIS.

Camaroptera brevicaudata (nec Cretzschm.); Sharpe, Ibis, 1892, p. 158 (Elgeyu); Jackson, Ibis, 1901, p. 69 (Eldoma Ravine; Lake Naivasha; Nandi).

Camaroptera griseiviridis (v. Müll.); Reichenow, Vög. Affrikas, iii. p. 616 (1905).

H. 996. ♂ ad. Katwe, Toro, March 8, 1902. Iris ochre-yellow; bill black; feet pale fleshy-yellow.

119. BURNESIA REICHENOWI.

Burnesia reichenowi Hartl.; Jackson, Ibis, 1901, p. 64 (Entebbe; Kavirondo; Nandi); Sharpe, Hand-l. B. iv. p. 241 (1903).

Burnesia ugandæ Sharpe, Bull. B. O. C. vii. p. vi (1897); id. Ibis, 1898, p. 146.

Prinia reichenowi Reichenow, Vög. Afrikas, iii. p. 595 (1905).

H. 1088. ♂ ad. Toro, March 17, 1902. Iris dull crimson; bill black; feet pinkish flesh-coloured.

H. 1089. ♀ ad. Toro, March 17, 1902.

120. LANIUS EXCUBITORIUS.

Lanius excubitorius Prév. & Des Murs; Sharpe, Ibis, 1891, p. 597 (Turquel); Jackson, Ibis, 1901, p. 33 (Entebbe; Elgeyu); Hartert, in Ansorge's Afr. Sun, App. p. 340 (1899: Unyoro); Neum. J. f. O. 1900, p. 263; Hartert, Nov. Zool. vii. p. 38 (1900: Toro); Sharpe, Ibis, 1902, p. 115 (N. Ankole); Neum. J. f. O. 1900, p. 263 (Kavirondo); 1905, p. 227; Reichenow, Vög. Afrikas, ii. p. 615 (1903).

H. 926. ♀ ad. Katwe, Toro, March 1, 1902. Iris brown; bill and feet black.

121. FISCUS HUMERALIS.

Lanius humeralis Hartl.; Sharpe, Ibis, 1891, p. 597 (Kikuyu; Mt. Elgon; Elgeyu); Sharpe, P. Z. S. 1900, p. 606 (Nairobi Forest); Jackson, Ibis, 1901, p. 34 (Eldoma Ravine; Mt. Elgon; Nandi); Sharpe, Ibis, 1902, p. 115 (Eldoma Ravine); Reichenow, Vög. Afrikas, ii. p. 609 (1903).

Lanius collaris humeralis Hartert, in Ansorge's Afr. Sun, App. p. 340 (1899: Unyoro); Neumann, J. f. O. 1900, p. 264 (Kavirondo; Ukambani); Hartert, Nov. Zool. vii. p. 38 (1900: Nairobi Lake; Varangot in Toro); Neumann, J. f. O. 1905, p. 227.

Fiscus humeralis Sharpe, Hand-l. B. iv. p. 284 (1903).

H. 1005. ♂ ad. Katwe, Toro, March 9, 1902. Bill and feet black.

122. ENNEOCTONUS COLLYRIO.

Lanius collyrio Linn.; Sharpe, Ibis, 1891, p. 595 (Machakos); Hinde, Ibis, 1898, p. 580 (Machakos); Neumann, J. f. O. 1900, p. 265 (Tanga; Umbagwe; Teita); Jackson, Ibis, 1901, p. 35 (Teita; Eldoma Ravine).

Enneoctonus collurio Sharpe, Hand-l. B. iv. p. 285 (1903).

H. 1172. ♂ ad. Ankole, 5500 feet, April 4, 1902. Iris brown; bill slaty-brown; feet blackish brown.

123. CHLOROPHONEUS CHRYSOGASTER.

Laniarius chrysogaster (Swains.); Sharpe, Ibis, 1891, p. 600 (Machakos); Jackson, Ibis, 1901, p. 42 (Ukambani; Lake Basingo).

Chlorophoneus sulfureipectus, pt., Sharpe, Hand-l. B. iv. p. 291 (1903).

Chlorophoneus sulfureipectus chrysogaster Reichenow, Vög. Afrikas, ii. p. 562 (1903).

H. 918. ♂ ad. Kangao's, Toro, Feb. 28, 1902. Iris brown; bill black; feet greyish horn-blue. The first example seen. I observed another on March 23rd, but was unable to get it.

H. 1158, ♂ ad. Ankole, March 29, 1902. Bill black; feet greyish blue.

This Shrike seems to be rare; it was not met with in Unyoro.

124. LANIARIUS ERYTHROGASTER.

Laniarius erythrogaster (Cretzschm.); Sharpe, Ibis, 1891, p. 599 (Turquel); Jackson, Ibis, 1901, p. 42 (Entebbe; Elgeyu); Hartert, in Ansorge's Afr. Sun, App. p. 341 (1899: Unyoro); Neum. J. f. O. 1900, p. 270 (Kavirondo); Hartert, Nov. Zool. 1900, p. 37 (Lake Kikorongo; Lake Albert Edward); Sharpe, Hand-l. B. iv. p. 295 (1903); Reichenow, Vög. Afrikas, ii. p. 586 (1903).

H. 1008. ♀ ad. Near Katwe, Toro, March 9, 1902. Iris white; bill and feet black.

125. DRYOSCOPUS HOLOMELAS.

Dryoscopus holomelas Jackson, Bull. B. O. C. xvi. p. 90 (1906).

H. 791. ♀ ad. Ruwenzori, Feb. 10, 1902. Iris brown; bill and feet black, under part of toes green. The first specimen seen.—P.S., March 23rd: The bird is found in thick tangled undergrowth.

H. 817. ♀ ad. Ruwenzori, Feb. 12, 1902. Fairly plentiful.

H. 876. ♀ ad. Ruwenzori, Feb. 21, 1902.

[This species is closely allied to *D. leucorhynchus*, but is much less in size, and has a very much smaller bill. All three specimens seem to be quite adult, but have black bills. The comparative measurements are as follows:—

	Long. tot. in.	Culm. in.	Wing. in.	Tail. in.	Tarsus. in.
D. leucorhynchus	8·6	1·2	3·8	3·4	1·35
D. holomelas	7·0	0·9	3·2	2·75	1·2

—R. B. S.]

126. DRYOSCOPUS NANDENSIS.

Dryoscopus nandensis Sharpe, Bull. B. O. C. xi. p. 28

(1900); id. Ibis, 1901, p. 41, pl. ii. fig. 1; Jackson, Ibis, 1901, p. 41.

Dryoscopus angolensis nandensis Reichenow, Vög. Afrikas, ii. p. 590 (1903).

H. 736. Ad. Kibero, Toro, Jan. 31, 1902. Iris brown; bill black; feet light grey, with a decided pinkish tinge. The only specimen seen.

127. Dryoscopus cinerascens.

Dryoscopus malzacii nyansæ Neum. J. f. O. 1900, p. 272 (Kavirondo).

Dryoscopus nyanzæ Jackson, Ibis, 1901, p. 39 (Entebbe; Busoga; Eldoma Ravine; Nandi); Sharpe, Hand-l. B. iv. p. 297 (1903).

Dryoscopus cinerascens Hartl.; Reichenow, Vög. Afrikas, ii. p. 596 (1903).

H. 790. ♂ ad. Ruwenzori, Feb. 10, 1902. Iris deep yellow; bill black, the lower mandible with a bluish tinge; feet horn-blue.

H. 968. ♀ ad. Katwe, Toro, March 6, 1902. Bill black, lower mandible aluminium-coloured; feet darkish horn-blue.

H. 1004. ♂ imm. Katwe, March 9, 1902. Iris bright orange; bill black; feet horn-blue.

128. Nicator chloris.

Nicator chloris (Less.); Sharpe, Bull. B. O. C. vi. p. xlviii (1897: Entebbe); Jackson, Ibis, 1901, p. 44 (Entebbe; Busoga); Sharpe, Hand-l. B. iv. p. 299 (1903).

H. 1123, 1124. ♂ ad. Toro Forest, March 21, 1902. Iris brown; bill black; feet slaty-blue. These birds seem to be fairly numerous in the forest.

129. Pomatorhynchus senegalus.

Telephonus senegalus (Linn.); Hartert, in Ansorge's Afr. Sun, App. p. 341 (1899: Ukamba); Neum. J. f. O. 1900, p. 296 (Uanga); Hartert, Nov. Zool. 1900, p. 38 (Mokia River, Toro; Fort George, Lake Albert Edward); Jackson, Ibis, 1901, p. 45 (Kibwezi); Sharpe, Hand-l. B. iv. p. 299 (1903).

H. 1022. ♂ ad. Near Kangao's, Toro, March 10, 1902. Iris deep greyish blue; bill black; feet French grey.

130. ANTICHROMUS MINUTUS.

Telephonus minutus Hartl.; Hartert, in Ansorge's Afr. Sun, App. p. 341 (Uganda); id. Nov. Zool. 1900, p. 38 (Toro); Jackson, Ibis, 1901, p. 47 (Nandi; Kakamega).

Pomatorhynchus minutus Neumann, J. f. O. 1905, p. 221 (Malo; Doko; Kaffa-Djimma); Reichenow, Vög. Afrikas, ii. p. 552 (1903).

Antichromus minutus Sharpe, Hand-l. B. iv. p. 301 (1903).

H. 746. ♂ ad. Near Fort Portal, Toro, Feb. 3, 1902. Iris pink; bill black; feet light slate-grey.

H. 1148. ♂ ad. Toro, March 27, 1902. Iris strawberry-red; bill black; feet slaty-grey. Found everywhere.

H. 1149. ♀ ad. Toro, April 8, 1902.

H. 1150. ♂ ad. Toro, March 27, 1902.

131. NILAUS NIGRITEMPORALIS.

Nilaus nigritemporalis Reichenow, J. f. O. 1892, p. 36; id. Vög. Afrikas, ii. p. 541 (1903).

H. 933. ♂. Toro, "open country, dotted with trees," March 2, 1902. Bill black; feet greyish blue. The first example seen.

H. 942. ♂ ad. Katwe, Toro, March 3, 1902. Iris brown; bill brownish black; feet dull horn-blue.

132. PENTHERES FASCIIVENTER.

Parus fasciiventer Reichenow, Orn. MB. 1893, p. 93; id. Vög. Afrikas, iii. p. 515 (1905).

Parus fasciiventris Shelley, B. Africa, ii. p. 237 (1900).

Pentheres fasciiventris Sharpe, Hand-l. B. iv. p. 331 (1903).

H. 763. ♂ ad. Ruwenzori, Feb. 9, 1902. Iris brown; bill blackish brown; feet slaty horn-blue. Met with for the first time to-day.

H. 764, 765. ♂ ad. Ruwenzori, Feb. 9, 1902.

H. 809. ♀ ad. Ruwenzori, Feb. 11, 1902. Iris hazel-brown; bill blackish brown; feet deep horn-blue. Common.

H. 810, 811. ♂ ad. et juv. Ruwenzori, Feb. 11, 1902.

[The young bird has the head and throat dusky black, inclining to brown on the fore-neck; the breast and sides of the body are light pinkish brown, and there is scarcely any trace of the black median line on the breast.—R. B. S.]

133. PENTHERES LEUCOMELAS.

Parus leucomelas Rüpp.; Sharpe, Ibis, 1891, p. 595 (Kitosh; Mt. Elgon); Jackson, Ibis, 1899, p. 638 (Ntebi).

Parus niger leucomelas Reichenow, Vög. Afrikas, iii. p. 511 (1905).

H. 995. ♂ ad. Toro, March 8, 1902. Iris brown; bill and feet black.

134. ZOSTEROPS SCOTTI.

Zosterops scotti Neumann, Orn. MB. 1899, p. 24 (Ruwenzori); Shelley, B. Africa, ii. p. 184 (1900); Neum. Orn. MB. 1904, p. 115; Reichenow, Vög. Afrikas, iii. p. 431 (1905); Sharpe, Hand-l. B. v. p. 13 (1906).

H. 755. ♂ ad. Ruwenzori, Feb. 8, 1902. Iris hazel-brown; bill black; feet dull horn-blue.

H. 851. ♂ ad. Ruwenzori, Feb. 14, 1902. Bill black; iris a brick-red brown; feet dull horn-blue.

H. 885. ♀ ad. Ruwenzori, Feb. 22, 1902. Iris yellowish brown; bill black; feet dull horn-blue.

135. NECTARINIA MELANOGASTER.

Nectarinia melanogastra Fischer & Reichenow; Sharpe, Ibis, 1891, p. 592 (Ukambani); Reichenow, Vög. Afrikas, iii. p. 497 (1905).

Nectarinia melanogaster Sharpe, Hand-l. B. v. p. 36 (1906).

H. 836. ♂ ad. Ruwenzori, Feb. 13, 1902.

136. NECTARINIA PULCHELLA.

Nectarinia pulchella (L.); Sharpe, Ibis, 1891, p. 592 (Lake Baringo); Hartert, in Ansorge's Afr. Sun, App. p. 351 (1899: Kibero; Lake Albert); Jackson, Ibis, 1899, p. 632 (Elgeyu); Shelley, B. Africa, ii. p. 23 (1900); Reichenow, Vög. Afrikas, iii. p. 497 (1905); Sharpe, Hand-l. B. v. p. 35 (1906).

H. 1046. ♀ ad. Kangao's, Toro, March 12, 1902.

137. Nectarinia purpureiventris.

Cinnyris purpureiventris Reichenow, Orn. MB. 1893, p. 60 (Lake Albert); id. J. f. O. 1894, p. 102, Taf. i. fig. 2; Shelley, B. Africa, ii. p. 39 (1900).

Nectarinia barakæ Sharpe, Bull. B. O. C. xiii. p. 8 (1902).

Nectarinia purpureiventris Sharpe, Bull. B. O. C. xiii. p. 50 (1903); Reichenow, Vög. Afrikas, iii. p. 503 (1905).

H. 781. ♂ ad. Ruwenzori, Feb. 10, 1902. A small flock of these birds was flitting about at the top of a tall tree, feeding on the red berries.

H. 799. ♂ imm. Ruwenzori, Feb. 11, 1902.

H. 822. ♀ ad. Ruwenzori, Feb. 12, 1902.

H. 829, 830. ♂ ad.; 831, 832. ♂ imm.; 833. ♀ ad. Ruwenzori, Feb. 13, 1902. A flock of these beautiful birds is always to be found on one particular tree in the forest—a very tall tree, the branches of which are covered with red berries, but I have not met with them anywhere else.

H. 848. ♂ ad. Ruwenzori, Feb. 14, 1902.

H. 887. ♂ ad. Ruwenzori, Feb. 23, 1902.

These birds are numerous, and nearly always to be found at the very top of the tall tree with the red berries. There are usually a dozen or two together.

[The female is a plain-coloured bird, yellowish olive above; the tail-feathers are dusky brown, with olive margins and narrow ashy tips, the two central feathers being very perceptibly lengthened. The head is slaty-grey, the lores and sides of face are blackish, the cheeks and throat are pale ashy, and the rest of the under surface is ashy olive, olive-yellow on the fore-neck and chest; under wing-coverts and quill-linings dark ashy.—R. B. S.]

138. Nectarinia kilimensis.

Nectarinia kilimensis Shelley: Sharpe, Ibis, 1891, p. 591 (Machakos; Sotik; Mt. Elgon; Masai Land); Jackson, Ibis, 1899, p. 631 (Eldoma Ravine; Nandi); Hartert, in

Ansorge's Afr. Sun, App. p. 351 (1899: Uganda; Unyoro); Hartert, Nov. Zool. vii. p. 49 (1900: Uganda); Shelley, B. Africa, ii. p. 28, pl. i. fig. 1 (1900); Sharpe, Ibis, 1902, p. 116 (Eldoma Ravine); Reichenow, Vög. Afrikas, iii. p. 502 (1905).

H. 744, 745. ♂ ad. Fort Portal, Toro, Feb. 3, 1902. This is the first time that I have come upon the Bronze Sun-bird with the long tail. On the march to Fort Portal the species seems to be that most frequently seen; in fact, along the Toro road it is met with everywhere.

H. 1055. ♀ ad. Near Kangao's, Toro, March 14, 1902.

H. 1141. ♀ ad. Toro, March 27, 1902.

H. 1142, 1143. ♂ ad. Toro, March 27, 1902.

This is by far the commonest Sun-bird in Uganda, Toro, and Unyoro. It is to be met with everywhere along the roads, especially in the trees with the red berries, which are so numerous near the road in open bush-country.

139. NECTARINIA ERYTHROCERCA.

Cinnyris erythrocerca Heugl.; Jackson, Ibis, 1899, p. 633; Shelley, Mon. Nectar. p. 209, pl. 64. fig. 2.

Cinnyris erythrocerius Shelley, B. Africa, ii. p. 49 (1900).

Nectarinia erythrocerca Reichenow, Vög. Afrikas, iii. p. 495 (1905).

H. 952. ♂ ad. Katwe, Toro, March 4, 1902. I saw one other specimen to-day.

140. CINNYRIS CUPREUS.

Cinnyris cupreus (Shaw); Sharpe, Ibis, 1891, p. 593 (Kitosh); Hartert, in Ansorge's Afr. Sun, App. p. 350 (1899: Masindi, Unyoro); Jackson, Ibis, 1899, p. 633 (Kavirondo); Neum. J. f. O. 1900, p. 299 (Uganda; Kavirondo); Hartert, Nov. Zool. vii. p. 50 (1900: Uganda); Shelley, B. Africa, ii. p. 36 (1900); Sharpe, Ibis, 1902, p. 117 (W. Ankole); Reichenow, Vög. Afrikas, iii. p. 475 (1905); Sharpe, Hand-l. B. v. p. 44 (1906).

H. 703. ♂ ad. Entebbe, 4500 feet, Jan. 19, 1902.

141. CINNYRIS REICHENOWI.

Cinnyris reichenowi Sharpe, Ibis, 1891, pp. 444, 593, pl. xii. fig. 1 (Sotik); Jackson, Ibis, 1899, p. 631 (Eldoma Ravine; Nandi); Hartert, in Ansorge's Afr. Sun, App. p. 350 (1899: Nandi); Shelley, B. Africa, ii. p. 82 (1900); Reichenow, Vög. Afrikas, iii. p. 490 (1905).

Cinnyris ansorgei Hartert, in Ansorge's Afr. Sun, App. p. 350, pl. ii. fig. 1 (1899: Nandi; Uganda); Reichenow, Vög. Afrikas, iii. p. 490 (1905).

H. 776. ♂ ad. Ruwenzori, Feb. 10, 1902.

H. 798. ♀ ad. Ruwenzori, Feb. 11, 1902.

H. 837. ♂ ad. Ruwenzori, Feb. 13, 1902. Somewhat rare.

H. 908. ♂ ad. Ruwenzori, Feb. 25, 1902.

This is, after all, I think, the rarest of the Sun-birds to be found here. During our stay here and at the lower camp we have only seen about half a dozen specimens.

142. CINNYRIS REGIUS.

Cinnyris regius Reichenow, Orn. MB. 1893, p. 32; id. J. f. O. 1894, pl. i. fig. 1; Shelley, B. Africa, ii. p. 86 (1900); Reichenow, Vög. Afrikas, iii. p. 491 (1905).

H. 800. ♂ ad. Ruwenzori, Feb. 11, 1902. The first example seen up to this date.

H. 834, 835. ♂ ad. Ruwenzori, Feb. 13, 1902. This is undoubtedly the rarest Sun-bird that we have come across here. When we got to the higher altitudes on the 16th it was by far the commonest species.

H. 850. ♀ ad. Ruwenzori, Feb. 14, 1902.

H. 867, 868. ♂ ad.; 869. ♀ ad. Ruwenzori, Feb. 18, 1902. These birds I believed at first to be rather scarce, but higher up the mountain, on a long day's tramp, they were positively the only Sun-birds that I saw, and were very plentiful.

H. 910. ♀ ad. Ruwenzori, Feb. 25, 1902.

143. CHALCOMITRA ÆQUATORIALIS.

Cinnyris acik (nec Antin.); Sharpe, Ibis, 1891, p. 592 (Kikuyu; Busoga); Jackson, Ibis, 1899, p. 632 (Entebbe; Elgeyu); Hartert, in Ansorge's Afr. Sun, App. p. 351 (1899: Masindi, Unyoro).

Cinnyris æquatorialis Reichenow, Orn. MB. 1899, p. 171.

Cinnyris acik æquatorialis Hartert, Nov. Zool. 1900, p. 50 (Toro).

Chalcomitra azik æquatorialis Neum. J. f. O. 1900, p. 296 (Kavirondo; Uganda).

Chalcomitra æquatorialis Reichenow, Vög. Afrikas, iii. p. 464 (1905).

H. 993. ♂ ad. Katwe, Toro, March 8, 1902. As in Uganda, this is the common Sun-bird in Toro. Not seen up Ruwenzori.

144. CYANOMITRA RAGAZZII.

Cinnyris ragazzi (Salvad.); Jackson, Ibis, 1899, p. 636.

Cyanomitra obscura (nec Jard.); Neumann, J. f. O. 1900, p. 297 (N. Uganda); Shelley, B. Africa, ii. p. 125 (1900).

Chalcomitra obscura ragazzii Reichenow, Vög. Afrikas, iii. p. 53 (1905).

H. 1114. ♂ ad. Toro Forest, March 20, 1902.

H. 1115. ♂ ad. Toro Forest, March 20, 1902.

145. CYANOMITRA ALINÆ.

Cyanomitra alinæ Jackson, Bull. B. O. C. xiv. p. 94 (1904).

Chalcomitra alinæ Reichenow, Vög. Afrikas, iii. Nachtr. p. 841.

H. 780. ♂ ad. Ruwenzori, Feb. 10, 1902.

H. 794, 795. ♂ ad. Ruwenzori, Feb. 11, 1902. Iris crimson.

H. 821. ♂ ad. Ruwenzori, Feb. 12, 1902. Type of the species.

H. 822. ♀ ad. Ruwenzori, Feb. 12, 1902.

H. 838. ♂ ad. Ruwenzori, Feb. 13, 1902. Iris crimson. Very common.—N.B. (Feb. 26). These birds are not found higher up.

146. ANTHOTHREPTES HYPODILA.

Anthothreptes hypodila (Jard.); Jackson, Ibis, 1899, p. 636 (Eldoma Ravine; Nandi); Neum. J. f. O. 1900, p. 295 (Uganda; Ukambani); Shelley, B. Africa, ii. p. 151 (1900).

Anthreptes collaris hypodilus Reichenow, Vög. Afrikas, iii. p. 443 (1905).

Anthothreptes hypodila Hartert, in Ansorge's Afr. Sun, App. p. 352 (Samburu; Masongoleni; Taru Desert).

H. 1133. ♂ juv. Toro, March 24, 1902.

147. ANTHUS TRIVIALIS.

Anthus trivialis (L.); Sharpe, Cat. B. Brit. Mus. x. p. 543; id. Ibis, 1891, p. 588 (Mt. Elgon); Jackson, Ibis, 1899, p. 627 (Eldoma Ravine); Hartert, in Ansorge's Afr. Sun, App. p. 348 (1899: Unyoro); Neum. J. f. O. 1900, p. 290 (Kilimanjaro); Shelley, B. Africa, ii. p. 299 (1900); Reichenow, Vög. Afrikas, iii. p. 311 (1905).

H. 1021. ♀ ad. Near Kangao's, Toro, 7000 feet, March 10, 1902. Iris brown; bill blackish brown; feet brownish black.

148. MIRAFRA FISCHERI.

Mirafra fischeri (Reichen.); Sharpe, Cat. B. Brit. Mus. xiii. p. 600 (1890); Hartert, in Ansorge's Afr. Sun, App. p. 348 (Samburu, near Mombasa); Shelley, B. Africa, iii. p. 43, pl. 16. fig. 2 (1902); Reichenow, Vög. Afrikas, iii. p. 339 (1905).

H. 969. Katwe, Toro, 4000 feet, March 6, 1902. Iris yellowish brown; bill dark brown; feet flesh-coloured.

149. POLIOSPIZA ALBIFRONS.

Crithagra albifrons Sharpe, Ibis, 1891, pp. 118, 255 (Kikuyu; Mt. Elgon).

Serinus albifrons (Sharpe); Jackson, Ibis, 1899, p. 621 (Eldoma Ravine; Nandi); Hartert, Nov. Zool. vii. p. 43 (1899: Nairobi); Shelley, B. Africa, iii. p. 210, pl. 25. fig. 2 (1902).

Crithagra kilimensis Richmond, Auk, 1897, p. 155.

Serinus kilimensis Sharpe, Ibis, 1899, p. 622.

Poliospiza albifrons Reichenow, Vög. Afrikas, iii. p. 257 (1904).

H. 846. ♀ ad. Ruwenzori, Feb. 14, 1902. Iris yellowish brown; bill brown, the lower mandible horny-white; feet light brown.

H. 866. ♀ ad. Ruwenzori, Feb. 18, 1902. Iris brown;

bill brownish horn-coloured, the lower mandible dirty white; feet light brown.

150. Poliospiza striolata.

Serinus striolatus (Rüpp.); Sharpe, Ibis, 1891, p. 258; Neum. J. f. O. 1900, p. 287 (Kilimanjaro); Shelley, B. Africa, iii. p. 211 (1902).

Crithagra striolata affinis Richmond, Auk, 1897, p. 157.

Serinus affinis Jackson, Ibis, 1899, p. 620 (Eldoma Ravine; Nandi; Kikuyu); Hinde, Ibis, 1900, p. 494 (N'gong).

Poliospiza striolata Reichenow, Vög. Afrikas, iii. p. 256 (1904).

H. 903. ♂ ad. Ruwenzori, Feb. 24, 1902. Iris deep yellow-ochre; bill horn-brown; feet sepia-brown.

151. Vidua serena.

Vidua principalis (L.); Sharpe, Ibis, 1891, p. 244 (Teita); Jackson, Ibis, 1899, p. 596 (Nandi; Kavirondo; Entebbe).

Vidua vidua (L.); Hartert, in Ansorge's Afr. Sun, App. p. 347 (1899: Uganda).

Vidua serena (L.); Neum. J. f. O. 1900, p. 286 (Zanzibar; Uganda); Reichen. Vög. Afrikas, iii. p. 217 (1904); Shelley, B. Africa, iv. p. 16 (1905).

H. 711. ♂ juv. Toro, Jan. 24, 1902. Iris brown; bill pink; feet slaty-black.

H. 951. ♂ juv. Katwe, March 4, 1902. Iris brown; bill coral-pink; feet dark brown.

H. 1082. ♀ ad. Toro, March 17, 1902. Iris brown; bill pink; feet slaty-grey.

152. Penthetria ardens.

Penthetria ardens (Bodd.); Sharpe, Ibis, 1891, p. 244 (Teita); Jackson, Ibis, 1899, p. 598 (Entebbe).

Coliuspasser ardens Shelley, B. Africa, iv. p. 40 (1905); Reichenow, Vög. Afrikas, iii. p. 135 (1904).

H. 1027. ♂ (in change). Kangao's, Toro, March 2, 1902. The first specimen seen.

H. 1145. ♂ ad. Toro, March 27, 1902. Bill blackish brown; feet black. Extremely numerous at this time; often seen in companies of four or five together.

153. PENTHETRIA EQUES.

Penthetria eques (Hartl.); Sharpe, Ibis, 1891, p. 245 (Kikumbulin; Ukambani); Jackson, Ibis, 1899, p. 598 (Teita); Hartert, in Ansorge's Afr. Sun, App. p. 345 (1899: Ukamba); Neumann, J. f. O. 1900, p. 286 (Ukambani; Kavirondo; N. Uganda); Hartert, Nov. Zool. 1900, p. 41 (Holulu River, Semliki).

Coliuspasser eques Shelley, B. Africa, iv. p. 45 (1905); Reichenow, Vög. Afrikas, iii. p. 141 (1904).

H. 934. ♂ ad. Katwe, Toro, March 2, 1902. Iris brown; bill of the colour of aluminium; feet blackish brown.

This Marsh-Weaver was met with in the open country dotted with trees.

154. PYROMELANA FLAMMICEPS.

Pyromelana flammiceps (Swains.); Sharpe, Ibis, 1891, p. 247 (Kavirondo); Jackson, Ibis, 1899, p. 601 (Elgeyu); Hartert, in Ansorge's Afr. Sun, App. p. 344 (1899: Usoga); Neum. J. f. O. 1900, p. 285 (Majila); Sharpe, Ibis, 1902, p. 119 (Nandi); Shelley, B. Africa, iv. p. 104 (1905); Reichenow, Vög. Afrikas, iii. p. 118 (1904).

H. 1147. ♂ ad. Toro, March 27, 1902. Iris brown; bill dark brown; feet brownish flesh-coloured.

The only specimen seen during this expedition.

155. COCCOPYGIA KILIMENSIS.

Coccopygia kilimensis Sharpe, Cat. B. Brit. Mus. xiii. p. 307 (1890); id. Ibis, 1891, p. 250 (Sotik); Jackson, Ibis, 1899, p. 607 (Eldoma Ravine); Shelley, B. Africa, iv. p. 238 (1905).

Neisna kilimensis Reichenow, Vög. Afrikas, iii. p. 205 (1904).

H. 904. ♂ ad. Ruwenzori, Feb. 24, 1902. Iris crimson; bill black, the lower mandible crimson; feet black. On this date I met with this Weaver-Finch for the first time; in one place I found quite a quantity.

H. 905. ♀ ad. Ruwenzori, Feb. 24, 1902.

156. Nigrita diabolica.

Atopornis diabolica Reichenow & Neum. Orn. MB. 1895, p. 74.

Nigrita diabolica Neum. Orn. MB. 1899, p. 62; Reichenow, Vög. Afrikas, iii. p. 171 (1904); Shelley, B. Africa, iv. p. 142 (1905).

H. 741. ♂ ad. Kibera Forest, Toro, Feb. 1, 1902. Iris light crimson; bill black; feet olive-brown.

H. 766. ♀ juv. Ruwenzori, Feb. 9, 1902. Bill black; feet sepia-brown.

157. Spermestes stigmatophora.

Spermestes stigmatophora Reichenow, J. f. O. 1899, pp. 46, 133 (Bukoba: Sesse Isl.); Hartert, Nov. Zool. 1900, p. 41 (Ituri Forest).

Spermestes poensis, pt., Shelley, B. Africa, iv. p. 164 (1905).

Spermestes poensis stigmatophora Reichenow, Vög. Afrikas, iii. p. 153 (1904).

H. 843. ♀ ad. Ruwenzori, Feb. 13, 1902. Iris brown; bill black; feet brown.

H. 844. ♀ ad. Ruwenzori, Feb. 13, 1902. Iris brown; bill of the colour of aluminium; feet dark greenish brown. The first examples seen. A pair of them were flitting about near the ground.

158. Cryptospiza reichenowi.

Pytelia reichenowi Hartl. Ibis, 1874, p. 166.

Cryptospiza reichenowi Sharpe, Cat. B. Brit. Mus. xiii. p. 250 (1890); Reichenow, Vög. Afrikas, iii. p. 174 (1904); Shelley, B. Africa, iv. p. 278 (1905).

Cryptospiza ocularis Sharpe, Bull. B. O. C. xiii. p. 8 (1902).

H. 772. ♂. Ruwenzori, Feb. 10, 1902. Length $4\frac{11}{16}$ in. Iris brown; bill black; feet brown. ? Type of species.

H. 773. ♂ ad. Ruwenzori, Feb. 10, 1902. Soft parts as above.

H. 774. ♂ ad. Ruwenzori, Feb. 10, 1902. Length $4\frac{11}{16}$ in. Feet dark sepia-brown. Type of *C. ocularis*.

H. 843. ♀ ad. Ruwenzori, Feb. 13, 1902.

These birds are very common on Ruwenzori, going about in small flocks of five or six individuals. It is the only species of Weaver-Finch that we have met with up to this date.

159. CRYPTOSPIZA JACKSONI.

Cryptospiza jacksoni Sharpe, Bull. B. O. C. xiii. p. 8 (1902); Reichenow, Vög. Afrikas, iii. p. 175 (1904); Shelley, B. Africa, iv. p. 280, pl. xxxv. fig. 2 (1905).

H. 782. ♂. Ruwenzori, Feb. 10, 1902. Iris brown; bill black; feet sepia-brown.

H. 783. ♂ ad. Ruwenzori, Feb. 10, 1902. Feet blackish brown.

H. 806. ♂ ad. Ruwenzori, Feb. 11, 1902.
H. 855. ♂ ad. „ Feb. 15, 1902.

160. CRYPTOSPIZA SHELLEYI.

Cryptospiza shelleyi Sharpe, Bull. B. O. C. xiii. p. 21 (1902); Reichenow, Vög. Afrikas, iii. p. 175 (1904); Shelley, B. Africa, iv. p. 280, pl. xxxv. fig. 3 (1905).

H. 833. ♂ ad. Ruwenzori, Feb. 22, 1902. Iris brown; bill dark brown, crimson at the tip; lower mandible also crimson; feet sepia-brown. The only specimen of this species seen up to the present time.

161. ZONOGASTRIS MELBA.

Zonogastris melba (Linn.); Jackson, Ibis, 1899, p. 606 (Kibwezi; Lake Baringo); Hartert, in Ansorge's Afr. Sun, App. p. 346 (1899: Makindros River).

Pitylia melba Neum. J. f. O. 1900, p. 284 (Kavirondo).

Pytelia melba Shelley, B. Africa, iv. p. 273 (1905).

Pytilia melba Reichenow, Vög. Afrikas, iii. p. 163 (1904).

H. 1040. ♀ juv. Near Kangao's, Toro, March 12, 1902. Bill dark brown, lower mandible pinkish. Feet greyish brown. Iris yellowish brown.

H. 1170. ♂ ad. Ankole, April 3, 1902. Iris yellowish brown; bill coral-pink, culmen brownish. Feet light brown.

162. ESTRILDA MINOR.

Estrilda minor (Cab.); Sharpe, Ibis, 1891, p. 251 (Ukambani); Jackson, Ibis, 1899, p. 608 (Eldoma Ravine; Nandi); Shelley, B. Africa, iv. p. 198 (1905).

Estrilda astrild minor Reichenow, Vög. Afrikas, iii. p. 180 (1904).

H. 953. ♂ ad. Katwe, Toro, March 5, 1902. Iris brown; bill coral-pink; feet dark brown.

163. ESTRILDA NONNULA.

Estrilda nonnula Hartl.; Jackson, Ibis, 1899, p. 609 (Nandi Forest); Hartert, in Ansorge's Afr. Sun, App. p. 346 (Unyoro); Shelley, B. Africa, iv. p. 226 (1905); Reichenow, Vög. Afrikas, iii. p. 188 (1904).

H. 909. ♂ ad. Ruwenzori, Feb. 25, 1902. Iris brown; bill black, with a dark crimson mark on each side of the culmen and another at the base of the lower mandible; feet black.

164. ESTRILDA CHARMOSYNA.

Habropyga charmosyna Reichenow, J. f. O. 1881, p. 333.

Estrilda charmosyna Shelley, B. Africa, iv. p. 232 (1905); Reichenow, Vög. Afrikas, iii. p. 190 (1904).

Estrilda delamerei Sharpe, Bull. B. O. C. x. p. cii (1900).

H. 1174, 1175. ♂ ad. Ankole, 5000 feet, April 4, 1902. Iris dull crimson; bill blackish brown, horn-blue at base; feet black.

165. ESTRILDA RHODOPYGA.

Estrilda rhodopyga Sund.; Hartert, in Ansorge's Afr. Sun, App. p. 346 (1899: Unyoro); Neumann, J. f. O. 1900, p. 285; Shelley, B. Africa, iv. p. 205, pl. xxxii. fig. 1 (1905).

H. 997. ♂ ad. Katwe, Toro, March 8, 1902. Iris brown; bill and feet blackish brown.

166. LAGONOSTICTA RUBERRIMA.

Lagonosticta brunneiceps ruberrima Reichenow, Orn. MB. 1893, p. 24 (Victoria Nyanza); id. Vög. Afrikas, iii. p. 198 (1904).

Lagonosticta brunneiceps, pt., Shelley, B. Africa, iv. p. 258 (1905).

H. 1042. ♂ ad. Kangao's, Toro, March 11, 1902. Iris crimson; eyelid yellow; bill pink-brown on culmen; feet light brown.

167. LAGONOSTICTA RHODOPARIA.

Lagonosticta rhodoparia Heugl.; Jackson, Ibis, 1899, p. 605 (Nandi; Kavirondo); Shelley, B. Africa, iv. p. 250, pl. xxxiv. fig. 1 (1905); Reichenow, Vög. Afrikas, iii. p. 200 (1904).

H. 944. ♂ ad. Katwe, Toro, March 3, 1902. Iris brown; bill aluminium-coloured; feet dark brown. Somewhat rare.

H. 1043. ♀ ad. Kangao's, Toro, March 12, 1902. Iris yellowish brown; bill brown; feet light sepia-brown.

168. SITAGRA ALIENA.

Sitagra aliena Sharpe, Bull. B. O. C. xiii. p. 21 (1902).

Hyphanturgus alienus Shelley, B. Africa, iv. p. 392, pl. xxxix. fig. 2 (1905).

Ploceus alienus Reichenow, Vög. Afrikas, iii. p. 68 (1904).

H. 775. ♂ ad. Ruwenzori, Feb. 10, 1902. The first Weaver that we have seen here.

H. 841, 842. ♂ ad. et juv. Ruwenzori, Feb. 13, 1902. Iris brown; bill black; feet horn-blue. These birds are distinctly common, and go about two or three together. Type of the species.

H. 884. ♂ ad. Ruwenzori, Feb. 22, 1902. Iris crimson; bill black; feet greyish blue. Undoubtedly one of the commonest of the Weavers here.

169. SITAGRA LUTEOLA.

Sitagra luteola (Licht.); Jackson, Ibis, 1899, p. 615 (Elgeyu; Guasa Molo Valley; Lake Baringo); Neumann, J. f. O. 1905, p. 282 (Kavirondo); Shelley, B. Africa, iv. p. 397 (1905).

Ploceus alienus Reichenow, Vög. Afrikas, iii. p 76 (1904).

H. 1010. ♂ ad. Katwe, Toro, March 9, 1902. Iris deep yellow-ochre; bill black; feet greyish mauve.

170. ICTEROPSIS PELZELNI.

Icteropsis pelzelni (Hartl.); Jackson, Ibis, 1899, p. 610 (Entebbe); Hartert, Nov. Zool. 1900, p. 40 (Fort George, Lake Albert Edward).

Sitagra pelzelni Neumann, J. f. O. 1900, p. 282 (Kome Isl., Victoria Nyanza); Shelley, B. Africa, iv. p. 394 (1905).

Ploceus pelzelni Reichenow, Vög. Afrikas, iii. p. 75 (1904).

H. 943. ♂ juv. Katwe, Toro, March 3, 1902. Iris yellow-ochre; bill black; feet fleshy brown.

171. OTHYPHANTES STUHLMANNI.

Symplectes stuhlmanni Reichenow, Orn. MB. 1893, p. 29; Hartert, Nov. Zool. 1900, p. 42 (Toro; Uganda; Unyoro).

Ploceus stuhlmanni Reichen. Vög. Afr. iii. p. 40 (1904); Neumann, J. f. O. 1905, p. 338 (Sidamo; Djamjam).

Othyphantes stuhlmanni Shelley, B. Africa, iv. p. 453 (1905).

H. 1009. ♂ ad. Near Katwe, Toro, March 9, 1902. Iris white, suffused with yellow; bill black; feet brownish flesh-coloured.

172. XANTHOPHILUS XANTHOPS.

Hyphantornis xanthops (Hartl.); Neumann, J. f. O. 1900, p. 282 (Kavirondo); Hartert, Nov. Zool. 1900, p. 40 (Toro).

Hyphantornis camburni Sharpe, Bull. B. O. C. x. p. xxxv (1900); id. P. Z. S. 1900, p. 603 (Narobi Forest).

Xanthophilus xanthops Shelley, B. Africa, iv. p. 483 (1905).

Ploceus xanthops Reichenow, Vög. Afrikas, iii. p. 89 (1904).

H. 1051. ♀ ad. Kangao's, Toro, March 13, 1902. Iris light yellow; bill black; feet brownish flesh-coloured.

173. MELANOPTERYX NIGERRIMA.

Melanopteryx nigerrima (Vieill.); Jackson, Ibis, 1899, p. 617 (Entebbe); Hartert, in Ansorge's Afr. Sun, App. p. 343 (1899: Unyoro; Uganda); Neumann, J. f. O. 1900,

p. 283 (Kavirondo; Kampala); Hartert, Nov. Zool. 1900, p. 40 (Shire River); Shelley, B. Africa, iv. p. 362 (1905).

Ploceus nigerrimus Reichenow, Vög. Afrikas, iii. p. 50 (1904).

H. 1086. ♀ ad. Toro, March 17, 1902. Iris light yellow suffused with brown; bill dark brown; feet brownish flesh-coloured.

174. MALIMBUS CENTRALIS.

Malimbus rubricollis centralis Reichenow, Orn. MB. 1893, p. 30; id. Vög. Afrikas, iii. p. 21 (1904).

Malimbus rubricollis (nec Sw.); Jackson, Ibis, 1899, p. 617 (Entebbe); Sharpe, Ibis, 1902, p. 119 (Entebbe).

Malimbus rubricollis (Sw., pt.); Shelley, B. Africa, iv. p. 346 (1905).

H. 739. ♂. Kibera Forest, Toro, Feb. 1, 1902. Iris brown; bill and feet black. To be met with nearly everywhere. Common in the Kibera Forest.

175. AMBLYOSPIZA MELANONOTA.

Amblyospiza melanonota (Heugl.); Jackson, Ibis, 1899, p. 618 (Entebbe; Nandi).

Amblyospiza melanotus Reichenow, Vög. Afrikas, iii. p. 100 (1904).

Amblyospiza melanota Shelley, B. Africa, iv. p. 307 (1905).

H. 1069. ♀ ad. Toro, March 16, 1902. Iris brown; bill yellow; feet blackish brown.

H. 1081. ♀ ad. Toro, March 17, 1902. Feet dark slaty-brown. Fairly common.

176. BUCHANGA AFRA.

Buchanga assimilis (Bechst.); Sharpe, P. Z. S. 1895, p. 462 (Sibbe, Somali Land).

Buchanga afra (Licht.); Jackson, Ibis, 1899, p. 596 (Elgeyu; Kamassia).

Dicrurus afer Hartert, Nov. Zool. 1900, p. 38 (Toro); Reichenow, Vög. Afrikas, ii. p. 646 (1903).

H. 1107. ♂ ad. Toro Forest, March 19, 1902. Bill and feet black; iris crimson.

177. ORIOLUS ROLLETI.

Oriolus larvatus (nec Licht.); Sharpe, Ibis, 1891, p. 242 (Mount Elgon).

Oriolus rolleti Salvad.; Jackson, Ibis, 1899, p. 595 (Entebbe; Kamassia; Eldoma Ravine; Nandi); Hinde, Ibis, 1900, p. 493 (Ashi River); Hartert, in Ansorge's Afr. Sun, App. p. 341 (1899: Ndi); Sharpe, Ibis, 1902, p. 120 (N. Ankole; Nandi).

Oriolus larvatus rolleti Reichenow, Vög. Afrikas, ii. p. 659 (1903).

Oriolus larvatus, pt., Shelley, B. Africa, v. p. 12 (1906).

H. 976. ♂ ad. Katwe, Toro, March 6, 1902. Iris crimson; bill pinkish brown; feet dull horn-blue.

H. 977. ♀ ad. Katwe, March 7, 1902. Feet deep horn-blue. Fairly common, but shy.

H. 1100. ♂ ad. Toro Forest, March 19, 1902. Iris crimson; bill light ruddy brown; feet slaty-blue.

178. PERISSORNIS CARUNCULATA.

Dilophus carunculatus (Gm.); Sharpe, Ibis, 1891, p. 243 (Kitosh; Lake Naivascha); Hartert, in Ansorge's Afr. Sun, App. p. 349 (1899); Jackson, Ibis, 1899, p. 588 (Nandi); Neumann, J. f. O. 1900, p. 279 (Kilimanjaro; Kavirondo).

Perissornis carunculatus Hinde, Ibis, 1900, p. 493 (N'gong, Masai Land); Reichenow, Vög. Afrikas, ii. p. 670 (1903).

Creatophora carunculata Shelley, B. Africa, v. p. 123 (1906).

H. 1166. ♂ imm. Ankole, April 1, 1902. Iris brown; bill light horn-coloured, suffused with purple; feet brown.

179. LAMPROTORNIS PORPHYROPTERUS.

Lamprotornis porphyropterus (Rüpp.); Sharpe, Cat. B. xiii. p. 156 (1890); id. Ibis, 1891, p. 240 (Turquel); id. P. Z. S. 1895, p. 459 (Sheik Husein).

Lamprotornis purpuropterus Hartert, in Ansorge's Afr. Sun, App. p. 341 (1899: Unyoro: Lake Albert); Reichenow, Vög. Afrikas, ii. p. 710 (1903); Shelley, B. Africa, v. p. 56 (1906).

Lamprotornis brevicaudus Sharpe, Bull. B. O. C. vi. p. xlviii (1897); Jackson, Ibis, 1899, p. 591 (Kinani; Elgeyu; Kavirondo); Neumann, J. f. O. 1900, p. 281 (Kavirondo); Sharpe, Ibis, 1902, p. 121 (Lake Baringo).

H. 979. ♀ ad. Near Katwe, Toro, March 7, 1902. Iris white; bill and feet black.

H. 1134. ♀ ad. Toro, March 24, 1902. A common species in Toro.

H. 1139. ♀ ad. Toro, March 27, 1902.

H. 1151. ♂ ad. Ankole, March 28, 1902.

180. Cinnamopterus tenuirostris.

Cinnamopterus tenuirostris (Rüpp.); Sharpe, P. Z. S. 1900, p. 602 (Mt. Kenya); Reichenow, Vög. Afrikas, ii. p. 703 (1903).

Onychognathus tenuirostris Shelley, B. Africa, v. p. 113 (1906).

H. 750. ♀ ad. Ruwenzori, Feb. 7, 1902. Iris brown; bill and feet glossy black.

H. 751. ♀ ad. Ruwenzori, Feb. 7, 1902.

I encountered these birds at the very foot of Ruwenzori, in a small but thickly foliaged tree almost overhanging a rushing mountain-torrent. On my firing a shot, at least fifty of them flew out from the tree and from another close by. At first I took them for Starlings, being attracted to them by their incessant chattering. When they flew, however, the reddish patch on their wings was very conspicuous.

181. Cinnyricinclus verreauxi.

Cinnyricinclus verreauxi (Bocage); Shelley, B. Africa, v. p. 41 (1906).

Pholidauges verreauxi Bocage; Hartert, Nov. Zool. vii. p. 39 (1900: Uganda); Sharpe, Ibis, 1891, p. 240 (Mt. Elgon); Jackson, Ibis, 1899, p. 589 (Eldoma Ravine; Lake Baringo); Neumann, J. f. O. 1900, p. 280 (N. Uganda; Kavirondo; Nguruman).

H. 707. ♂ ad. Six marches out from Entebbe, Jan. 21,

1902. Bill black; iris bright brown; feet dark slaty-brown. To-day I met with this bird for the first time. Besides the individual procured, I saw several singly or in small flocks of five or six. I never observed the species in Unyoro, but Baraka tells me that it was plentiful near Mt. Elgon.

H. 941. ♂ ad. Katwe, Toro, March 3, 1902. This was the first occasion on which we met with this species in Toro, though we had seen several on the march.

H. 1065. ♂ juv. Toro, March 16, 1902.

H. 1066. ♀ ad. Toro, March 16, 1902. Iris brown; bill and feet black.

H. 1067. ♀ ad. Toro, March 16, 1902.

H. 1068. ♀ ad. Toro, March 16, 1902. Iris bright lemon-yellow; bill and feet black.

H. 1070. ♀ ad. Toro, March 16, 1902.

These birds were seen in great numbers on the trees, feeding in company with Bulbuls.

182. CRYPTORHINA AFRA.

Cryptorhina afra (Linn.); Sharpe, Cat. B. Brit. Mus. iii. p. 675 (1877); Reichenow, Vög. Afrikas, ii. p. 642 (1903); Shelley, B. Africa, v. p. 161 (1906).

H. 928. ♂ ad. Near Katwe, Toro, March 1, 1902. Iris crimson, verging outwardly to purple; bill and feet black. The first and only specimen seen here.

H. 948, 949. ♂ ♀ ad. Katwe, Toro, March 4, 1902.

The only two occasions on which I have seen these birds were at the same place, though on different days. Each time three individuals were observed. The place was an open plain with short grass, and a few palm-trees dotted about, in which the birds perched. They never seemed to stay long in one place, but flew from tree to tree, and very low to the ground, as if they intended to settle every moment. Their note had a curious and somewhat harsh sound.

XXXI.—*On the correct Name of the Pied Flycatcher.*

By Ernst Hartert, Ph.D.

The first available and certain name for this species is *Muscicapa atricapilla* Linnæus, Syst. Nat. ed. xii. p. 326 (1766), and it should therefore be called *Muscicapa atricapilla*.

Mr. Harry C. Oberholser (*cf.* Smithson. Misc. Coll. 48, 1, p. 65, and Proc. U.S. Nat. Mus. xxviii. p. 909, footnote) declares categorically that the Pied Flycatcher should be called *Ficedula ficedula*. In the footnote on p. 909 he says:—"*Motacilla ficedula* Linnæus, Syst. Nat. ed. x. i. 1758, p. 185. This is undoubtedly the same as *Motacilla atricapilla* Linnæus, Syst. Nat. ed. x. p. 187."

In the 10th edition of the 'Systema Naturæ' we find *Motacilla ficedula* with the following diagnosis:—"*M.* subfusca, subtus alba, pectore cinereo maculato." The quotations are:—Fauna Suecica 231; Will. orn. 163; Raj. av. 81, no. 12; Alb. av. 3, p. 25, t. 26. "Habitat in Europa." Turning to the first source, Fauna Suecica 231, we find the same diagnosis and the same quotations as in the 'Systema Naturæ,' ed. x., while a description is added as follows:—"Color supra totus e fusco castaneus, subtus alba aut albo-cinerascens." Nobody who knows the Pied Flycatcher can pretend that either Linnæus's diagnosis or his description refers to the male, female, or young of this species. Let us now examine the other quotations.

Willughby's description is: "Colore supinè per caput, dorsum, alas & caudam ex fusco ad castaneum vergente. Foemina pronè tota albicat, mas ex albo ad cinereum vergit. Alarum remiges in mare nigrae sunt cum quibusdam intercurrentibus albis, in foemina ad castaneum vergunt; quemadmodum etiam cauda, quae in mare etiam est nigra. Contra fit in pedibus. Hi namque in mare sunt subcastanei, in foemina nigri." This description (mostly taken from Aldrovandus) is not clear. It cannot possibly be said to refer to the Pied Flycatcher, though it may perhaps be a mixture of descriptions of the female Blackcap and female

Pied Flycatcher. It is also very interesting to read the rest of Willughby's article. The birds then (in the 17th century) and still exported from Cyprus, and in those days called Cyprus-birds, were and are mostly Blackcaps, though not exclusively. Ray's description is merely an extract of Willughby's. Lastly, Albin figures and describes a "small long-bodied bird," which he calls the "Fig-eater," and which, among other remarkable characters, has a "yellow breast, spotted with black." This description most certainly does not refer to a Pied Flycatcher. The figure is abominable, and, whatever it may be meant for, is not a Pied Flycatcher, but more probably a sort of Pipit. Albin "had it out of the Collection of Sir Thomas Lowther." Unfortunately that collection, containing so many birds figured by Albin and named from Albin's work by Linnæus, seems to have disappeared.

Mr. Oberholser crowns his assertion, that the name *ficedula* must be adopted for the Pied Flycatcher, with the remark that it is "undoubtedly the same as *Motacilla atricapilla*, Syst. Nat. ed. x. p. 187, and as it stands first should be adopted." This remark, however, is most careless, because *Motacilla atricapilla* L. is not a Flycatcher, but undoubtedly the Blackcap, our *Sylvia atricapilla*!

In the 12th edition (i. p. 330) Linnæus adds to his *Motacilla ficedula* quotations which certainly refer to the Pied Flycatcher, notably the very good figure of Frisch, and a description which is apparently taken from Frisch's plate, but the diagnosis is the same as that of 1758. Therefore, some writers might be inclined to regard the article on the *Motacilla ficedula* of 1766 as a correction and completion of that of 1758 (which, as we have seen, is not referable to the Pied Flycatcher), and might therefore accept the name *ficedula*. But there is already, before the appearance of the name *ficedula*, on p. 326 the very clear and undoubted description of the Pied Flycatcher under the name *Muscicapa atricapilla*. Thus the only course we can take is:—

1. To discard *Motacilla ficedula* of 1758 as a doubtful mixture.

2. To treat *Motacilla ficedula* of 1766 as a partial synonym of *Muscicapa atricapilla* and partially as a doubtful mixture.

3. To accept *Motacilla atricapilla* of 1758 (p. 187) as the undoubtedly correct name of the Blackcap.

4. To accept *Muscicapa atricapilla* of 1766 (which has nothing to do with Linnæus's *Motacilla atricapilla*) as the correct name of the Pied Flycatcher.

The generic name *Ficedula* cannot be used for the Black-and-White Flycatchers, because, first of all, we cannot separate the various genera adopted by Oberholser, as I shall shew elsewhere, and, secondly, it is a Brissonian name, which, as I explained at the last Zoological Congress in Berlin, cannot be adopted. Therefore, I repeat once more, the Pied Flycatcher cannot be called *Ficedula ficedula*, but should be termed *Muscicapa atricapilla*.

XXXII.—*Proceedings at the Anniversary Meeting of the British Ornithologists' Union*, 1906.

The Annual Meeting of the British Ornithologists' Union for this year was held at the house of the Zoological Society of London, No. 3 Hanover Square (by permission), on May 30th. In the absence of the President, the Chair was taken by Dr. P. L. Sclater, D.Sc., F.R.S.

The Minutes of the last Annual Meeting were read and confirmed.

The Report of the Committee announced the continued prosperity of the Union during the past year, as regards both its Membership and its finances.

The volume of 'The Ibis' for 1905 was the fifth of the eighth series, under the joint Editorship of Dr. P. L. Sclater, D.Sc., F.R.S., and Mr. A. H. Evans, M.A. It contained 677 pages, and was illustrated by 11 coloured and 2 uncoloured plates.

With much regret the Committee reported the deaths of the following Members of the Union:—

Ordinary Members: Dr. William T. Blanford, Mr. James

Carter, Lieut. Sutton A. Davies, Dr. Paul Leverkühn, Sir Robert L. Patterson, Canon Tristram, and Lieut. Martin Young.

Honorary Member: Dr. Jean Cabanis.

Colonial Member: Capt. F. W. Hutton.

Foreign Members: Dr. Victor Fatio and Dr. E. Oustalet.

Eight Members had resigned since the last Annual Meeting and the names of three others had been removed under Rule 6. Also the election of Lt.-Col. A. Collins, which had taken place at the last Annual Meeting, had been cancelled at his request.

At the date of the Meeting the Union consisted of 396 Ordinary Members, 2 Extra-Ordinary Members, 9 Honorary Members, 5 Colonial Members, and 18 Foreign Members.

The Report having been received, the Meeting proceeded to elect officers for the ensuing year, and it was announced that Dr. F. DuCane Godman, F.R.S., had been re-elected President, and Mr. Howard Saunders, Secretary; also that Mr. Frederick Gillett had been elected a Member of the Committee in the place of Mr. E. G. B. Meade-Waldo, who had retired by rotation. It was also announced that Dr. P. L. Sclater, D.Sc., F.R.S., and Mr. A. H. Evans, M.A., had been elected Editors of the ninth series of 'The Ibis.'

The following twenty-five gentlemen were then ballotted for and elected Ordinary Members of the Union:—David A. Bannerman, The Pilgrims' Way, Westerham, Kent; George L. Bates, C.M.Z.S., Kribi, Cameroon, West Africa; Staines Boorman, Heath Farm, Send, Woking, Surrey; John A. S. Bucknill, M.A., Government Patent Office, Box 52, Pretoria, Transvaal; The Hon. Ian M. Campbell, Cawdor, N.B.; Russell J. Colman, D.L., J.P., Norwich; Hugh S. R. Elliot, 14 A Lancaster Street, Lancaster Gate, W.; Jeremiah M. Goodall, 52 Oxford Gardens, North Kensington, W.; Seton P. Gordon, Auchintoul, Aboyne, N.B.; Arthur Foster Griffith, 59 Montpellier Road, Brighton; Septimus Hedges, The Weir House, Sunbury-on-Thames; Paul Kollibay, Ring 12, I., Neisse, Germany; John H. Leigh, Matcham's Park, Ringwood, Hants; William E. F. Macmillan, 27 Queen's

Gate Gardens, S.W.; Major Henry A. F. Magrath, 51st Sikhs, Frontier Force, Kohat, India; Major H. Moore, District Pay Office, Gibraltar; Bertram B. Osmaston (Imperial Forest Service), Port Blair, Andaman Islands; Lt.-Col. Rullion H. Rattray, 22nd Punjab Infantry, Dera Ghazi Khan, Punjab; Baron R. Snouckaert van Schauburg, Neerlangbrock, Holland; Surgeon Charles E. C. Stanford, R.N., B.Sc., M.B., H.M.S. 'Robin,' China Squadron; Edward S. Steward, F.R.C.S., 10 Princes Square, Harrogate; Charles M. Tuke, Chiswick House, Chiswick, W.; Lt.-Commander Robert E. Vaughan, R.N., H.M.S. 'Robin,' China Squadron; Colin West, The Grange, South Norwood Park, S.E.; and Augustus F. Wiener, F.Z.S., 6 Northwick Terrace, Maida Vale, N.W.

Heer Johannes Büttikofer, C.M.Z.S., Director of the Zoological Garden, Rotterdam, and Mons. Sergius A. Buturlin, of Wesenberg, Esthonia, Russia, were elected Foreign Members.

On the motion of Mr. E. Bidwell, seconded by Mr. H. J. Elwes, the following resolution was unanimously passed:—

> "That the Committee be requested to consider the advisability of commemorating the Jubilee of the British Ornithologists' Union in 1908, and to report their opinion at the next Annual Meeting."

After a vote of thanks to the Council of the Zoological Society of London for the use of their rooms had been unanimously agreed to, the Meeting adjourned.

XXXIII.—*Notices of recent Ornithological Publications.*

[Continued from p. 387.]

59. *Alfaro on a new Owl from Costa Rica.*

[A new Owl from Costa Rica. By Anastasio Alfaro. Proc. Biol. Soc. Washington, xviii. p. 217.]

Cryptoglaux ridgwayi is described by the Director of the Costa Rica National Museum as a new species allied to

C. acadica, and is named after Mr. Ridgway, in remembrance of his recent visit to that republic (see above, p. 396). It is from the high mountains of Costa Rica. The type is in the U.S. National Museum.

60. '*Annals of Scottish Natural History.*'

[The Annals of Scottish Natural History. Nos. 57 & 58. January and April 1906.]

Mr. W. Eagle Clarke's account of his residence of five weeks on Fair Isle at the time of the autumn migration forms one of the most interesting papers that has appeared in our contemporary. Fair Isle, situated about halfway between the northernmost of the Orkneys and the extreme south of Shetland, is described as "a surpassingly good station for observations, perhaps second to none in Scotland." We will not enumerate the rarities among the fifty-six species of birds recorded, nor shall we attempt to give any abstract of Mr. Clarke's remarks, which will be found on pp. 4–21 and pp. 69–80. His companion, Mr. Norman B. Kinnear, has a short paper on the mammals of this rarely visited island.

The Ornithological Notes contain, among other interesting matter, corroboration of the hitherto questionable occurrence of the Blackcap in West Ross-shire; also, full confirmation of the breeding of the Pintail Duck in Shetland, about which there had been little moral doubt for some years, though it was not proven absolutely. According to Mr. Clarke, Shetland was visited last autumn by quite a number of Bullfinches belonging to the large North-European and Siberian form known as *Pyrrhula major*. As recorded by Mr. H. W. Robinson, an adult female of *Somateria spectabilis*—far rarer than the male—was obtained off Graemsay, Orkney, on February 21st, and an adult male of *Œdemia perspicillata* was watched inside Stromness Harbour in December.—H. S.

61. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. Vol. xxii. Nos. 1 & 2, January and April 1906.]

A List of the Birds of Louisiana, by Messrs. Beyer, Allison, and Kopman, opens the January number, and as fifteen pages are devoted to a preliminary sketch, it promises to be of some importance; there is, however, no continuation in April. Dr. Jonathan Dwight, Jr., who was visiting European Museums last year, now contributes an interesting paper on the White-winged Gulls, with a coloured plate of *Larus kumlieni* adult and immature. It will be remembered that this species is about the size of an Iceland Gull, but has some dark markings on the outer primaries, these being uncoloured in the Iceland and Glaucous Gulls. The last has also a "patterned" representative in *L. nelsoni*, of which only the type from Alaska, an adult from the same country, and an immature example from Vancouver were known up to 1897, when another adult was obtained at St. Michael's, Alaska, and one in Lower California. In the North Pacific these two sections are linked by the strongly patterned *L. glaucescens* to the Herring-Gull group. Even in the pattern of the primaries of *L. kumlieni* there is some variation, as is shown by Dr. Dwight's diagrams on p. 40. Mr. H. Lyman Clark's paper on the Feather Tracts of Swifts and Humming-birds is illustrated by two black-and-white plates, and well deserves the attention of students of pterylosis. Mr. W. A. Anthony's Random Notes on the Pacific Coast Gulls and his subsequent Stray Notes from Alaska are examples of very pleasant descriptive writing. Mr. H. J. Bowles, with his List of the Birds of Tacoma, Puget Sound, evokes the interest due to proximity to British Columbia; while Dr. C. H. Townsend's Notes on the Birds of Cape Breton Island bring us actually to British territory, though on the eastern side of America. A paper by Mr. H. O. Jenkins on the Variations in *Dryobates villosus* and its subspecies is illustrated by a map of the distribution and by diagrams of the wing-spotting of the eastern and western forms. Mr. Ruthven Deane (pp. 194–209) contributes the first instalment of a very pleasing correspondence between Audubon and Spencer F. Baird, commencing with a letter written in 1840 by the latter, then a lad of fifteen, to the great ornithologist in his fifty-eighth year. The kindliness of the veteran to the beginner, who afterwards became so celebrated, is a highly attractive feature. Mr. F. W. Carpenter's paper on An Astronomical Determination of the Heights of Birds during Nocturnal Migration revives a subject started by Mr. W. E. D. Scott a quarter of a century ago and not altogether forgotten; the trend of the observations being, so far as they have gone at present, that the maximum height recorded is 2400 feet at the places mentioned. It must be remembered that migration by night is the subject; in the day-time far greater elevations are attained. Among the General Notes are some additional records of the Ruff in America (p. 98); of the Lapwing in Long Island, New York, and also in Newfoundland (p. 221); and the acquisition of an example of *Pelecanus erythrorhynchus* at Liverpool Bay in the Arctic Ocean, in lat. 70° N., being 9° beyond the limit hitherto assigned by Mr. Ridgway. The description of a new form of *Oceanodroma* by Hans Graf von Berlepsch may be noticed; he distinguishes his *O. monorhis chapmani*, of Lower California, from *O. monorhis* (Swinh.), of the Asiatic side of the Pacific.—H. S.

62. '*The Avicultural Magazine.*'

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. iv. Nos. 3–5. Jan.–Mar. 1906.]

Two articles are particularly noticeable in these numbers, one by Mr. W. Goodfellow on Mrs. Johnstone's Lorikeet (*Trichoglossus johnstoniæ*), a species which he discovered in some numbers on the lofty mountains of Mindanao in the Philippines, and another by Mr. R. Phillipps in continuation of his former account of the Regent-Bird in captivity, wherein he describes the successful rearing of two young, though one of them lived only about a month. Very careful observations were made on the habits of the birds and on their change of plumage, and such exact descriptions must always be of exceptional value.

Mr. A. F. Wiener writes on the respective merits of aviaries and cages, and has called forth a series of letters in reply, while the Secretary invites us all to contribute to the discussion.

Among other items Mr. L. M. Seth-Smith gives an account of a visit to Uganda, Dr. Butler discourses on the family *Icteridæ* and on the genus *Phonipara*, Mr. Trevor-Battye records his successful breeding of *Callipepla squamata*, and Mr. Haagner reports on a hybrid between *Serinus canicollis* and *Alario alario*.

63. *Balducci on the Iris of* Athene chiaradiæ.

[Osservazioni e considerazioni nella pigmentazione del iride dell' *Athene chiaradiæ*. Per il Dott. Enrico Balducci. Monit. Zool. Ital. xvi. No. 9 (Firenze, 1905), p. 208.]

The famous "*Athene chiaradiæ*," described and figured by Prof. Giglioli in this Journal in 1902, has given rise to much discussion and to many comments. In the present paper the structure of its iris is described and figured, and compared with that of *Athene noctua*. Several questions connected with the origin of the form are also discussed. But it does not appear that much progress has been made in determining how or why this strange "sport," if it may be so called, has deviated from the typical form.

64. *Bangs on new American Subspecies.*

[Description of Seven new Subspecies of American Birds. By Outram Bangs. Proc. Biol. Soc. Washington, xviii. p. 151.]

The subspecies described as new are *Crypturus soui mustelinus* from Santa Marta, *Scardafella inca dialeucos* from Honduras and Nicaragua, *Claravis pretiosa livida* from Colombia, *Geotrygon martinica digressa* from Guadeloupe, *Dacnis cayana callaina* from Chiriqui, *Callospiza lavinia cara* from Honduras, and *Phœnicothraupis rubica confinis* from Honduras.

Calospiza lavinia cara, established on two specimens only, is "similar in colour" to the typical form, but has a "much larger and more slender bill" (!).

65. *Bangs on* Icterus gualanensis.

[What is *Icterus gualanensis* Underwood? By Outram Bangs. Proc. Biol. Soc. Washington, xviii. p. 167.]

From information acquired through Mr. G. S. Miller, Jr., Mr. Bangs comes to the conclusion that this supposed species, of which only one example is known, is probably a "freak" or "sport" of *Icterus giraudi.*

66. *Bangs on the Races of* Chlorophanes.

[The Name of the Panama Green Honey-Creeper. By Outram Bangs. Proc. Biol. Soc. Washington, xviii. p. 185.]

It is shown that the race of *Chlorophanes spiza* of Panama is *C. s. exsul* and not *C. s. guatemalensis.*

67. *Bangs on the Cuban Crab-Hawk.*

[The Cuban Crab-Hawk, *Urubitinga gundlachii* (Cabanis). By Outram Bangs. Auk, xxii. p. 307.]

Mr. Bangs maintains that the Cuban representative of *Urubitinga anthracina* is quite a distinct species, and restores to it the name *gundlachii* originally applied to it by Cabanis. He also gives details as to its nesting and eggs.

68. *Beebe on the Bird-life of Mexico.*

[Two Bird-lovers in Mexico. By C. William Beebe. London: Constable & Co. 1 vol. 8vo. Pp. 408.]

Mr. Beebe, the Curator of Ornithology in the Zoological Park of New York, passed the winter of 1903–4 in the States of Jalisco and Colima in South-western Mexico. Accompanied by his wife, who is evidently quite as much a "Bird-lover" as himself, he landed from a steamer at Vera Cruz on Christmas Day, 1903, and arrived at Guadalajara by rail a week later. Hence three "camping-trips" were made in the vicinity of the Volcano of Colima, and the Pacific was visited at the harbour of Manzanillo. Although the birds of this part of Mexico are well-known *by their skins,* very few field-notes have as yet been written on them. Mr. Beebe's most interesting narrative is full of information throughout its course, while details are also given of other natural objects observed, both zoological and botanical. The numerous text-figures, mostly very good in execution, are an additional attraction to the work, which, we are sure, will attain a wide circle of appreciation among those who love birds in America. To us in England, of course, the Mexican forms of bird-life are less familiar, but the writer's lively descriptions of his adventures amongst them will be much appreciated by his brother ornithologists. Mr. Beebe, wisely perhaps, dispenses altogether with the scientific names of the birds mentioned in his narrative. But he calls them by English names, which in many cases, in Europe at least, are less intelligible than their Latin equivalents. Who, for example, would know that a "Varied Bunting" meant *Cyanospiza versicolor*, or a "Giraud Flycatcher" *Myiozetetes similis*? It is true that there is a systematically arranged "Appendix" with both the English and Latin names of each bird, which enables the patient reader to solve some of these enigmas, but the task is by no means easy.

The concluding chapter by Mrs. Beebe on "How we did it" is not one of the least amusing parts of the work. The advice given to future explorers of the wilds of Mexico is, no doubt, excellent. We are not surprised to learn that the simple countrymen were much impressed when they saw the "Señorita" riding along astride with a divided skirt! But that is, no doubt, the proper costume out-of-doors for a lady travelling in Mexico.

69. *Bianchi on the Birds of Prjevalski's Journeys in Central Asia.*

[Wissenschaftliche Resultate der von N. M. Prjewalski nach Central-Asien unternommen Reisen. Auf Kosten einer von seiner kaiserlichen Hoheit dem Grossfürsten-Thronfolger Nikolai Alexandrowitsch gespendeten Summe herausgegeben von der kaiserlichen Akademie der Wissenschaften. Zoologischer Theil. Band II. Vögel. Bearbeitet von V. Bianchi. Lief. 4. Folio. St. Petersburg, 1905.]

We are much pleased to find that Prof. Bianchi has taken up the task of completing the account of the important collections of birds made by Prjevalski during his four celebrated expeditions in Central Asia. The first three parts were prepared by Herr Pleske (see 'Ibis,' 1890, p. 256, and 1895, p. 286). Since 1894 no further instalments have been issued, but we have now before us the fourth part written by Prof. Bianchi, and are informed that others are likely to follow shortly. The present section is mainly devoted to the Larks, a very difficult group to handle satisfactorily. The following new subspecies are described:—*Otocorys brandti montana, O. b. przewalskii,* and *O. elwesi khamensis.* The text is written in Russian and German. The following species are well figured:—Plate vii. *Acredula calva, Cyanistes berezowskii*; Plate x. *Ægithalus stoliczkæ, Budytes leucocephala.*

70. *Buller's 'Supplement to the Birds of New Zealand.'*

[Supplement to the Birds of New Zealand. By Sir Walter Lawry Buller, K.C.M.G. Vol. i. 1905; vol. ii. 1906. 4to. 200 pp.; twelve plates. Published for the Subscribers by the Author. Price £6 6*s*. net.]

Seventeen years have elapsed since the publication of the 'Birds of New Zealand,' and Sir Walter Buller has rightly judged that it is time to summarize the additions that have been made to our knowledge of the subject since that important work was completed. Instead of bringing out a third edition, the author has thought it better to prepare a Supplement of the same style and appearance, and to incorporate in it all the new information which he has obtained, together with coloured illustrations of the species not figured in the former volumes. In so doing he has resolved to follow the new arrangement of Dr. Bowdler Sharpe's 'Hand-list,' so that he begins with the lowest and ends with the highest forms. The first volume of the Supplement is now published, and the second, we are informed, is nearly ready for issue.

Besides the Preface and the Introduction, the first volume of the Supplement, commencing with the Kiwis, contains an account of all the birds of New Zealand in the order of the 'Hand-list' up to the end of the Waders. Five coloured plates drawn by Keulemans represent *Apteryx haasti, Megapodius pritchardi, Cabalus modestus, Œstrelata cervicalis,* and the heads of *Diomedea bulleri* and *D. salvini.*

It should be noted that *all* the known species of New-Zealand birds are mentioned in the Supplement, so that it contains a complete list of the species of the Maorian Ornis at present known to us.

71. *Christensen on the Little Gull.*

[Dvergmaagen (*Larus minutus*) som Ynglefugl paa Klægbanken i Ringkjøbing Fjord. Af Roar Christensen. Vid. Med. nat. For. Kbhvn. 1905, pp. 245–249, pls. vi., vii.]

This paper records the breeding of the Little Gull in some numbers in Ringkjøbing Fjord near colonies of *Larus ridibundus* and *Sterna cantiaca*.

72. *Clark on new Birds from St. Vincent.*

[1. Preliminary Descriptions of Three new Birds from St. Vincent, West Indies. By A. H. Clark. Proc. Biol. Soc. Washington, xviii. p. 61 (1905).

2. Description of a new *Euphonia* from the Southern West Indies. *Id. t. c.* p. 19.]

In the first paper three new birds from St. Vincent, W.I., are characterized as *Holoquiscalus dispar*, *Buteo antillarum* (which occurs in other islands also), and *Urubitinga anthracina cancrivora*. In the second paper the form of *Euphonia flavifrons* from St. Vincent is separated as a "subspecies" under the name of *E. f. viscivora*.

73. *De Vis on new Fossil Birds from Australia.*

[A Contribution to the Knowledge of the Extinct Avifauna of Australia. By C. W. De Vis. Ann. Queensl. Mus. no. 6, pp. 1–25.]

Mr. De Vis describes a collection (of about 200 specimens of bones) made by Prof. Gregory during his examination of the deposits round Lake Eyre in 1902, and believed by him to be of Pleiocene or early Pleistocene age. About 108 of these shewed characters sufficient for identification, the others were fragmentary.

The new species now described and figured from this series are: *Taphaëtus lacertosus*, *Asturaëtus furcillatus*, and *Baza gracilis* (new Falconines); *Leucosarcia proevisa* (a new Pigeon); *Xenorhynchus nanus*, *Xenorhynchopsis tibialis*, and *X. minor* (new Storks); *Ibis conditus* (a new Ibis); *Archæocycnus lacustris* and *Chenopis nanus* (new Swans);

Biziura exhumata, *Anas* (*Nettion*) *strenua*, *Nyroca effodiata*, and *Nettopus eyrensis* (new Ducks); *Pelecanus grandiceps*, *P. proavus*, *Plotus laticeps*, *Phalacrocorax gregorii*, and *P. venustus* (new Pelecanidæ); and *Dromæus patricius* (a new Emu).

It is evident, therefore, that the former and larger Lake Eyre had a more varied and abundant avifauna than the present lake.

74. *De Vis's Ornithological Notes.*

["Ornithological." By C. W. De Vis. Ann. Queensl. Mus. no. 6, p. 41.]

Mr. De Vis writes on *Gerygone flavida* Ramsay, which he thinks has been incorrectly assigned in the Cat. of Birds (iv. p. 330) to *G. personata* Gould. He also describes as new *Sericornis tyrannula* and *Acanthiza modesta* from Charleville (*Broadbent*), and *A. katherina* and *Pachycephala mestoni* from the Bellenden Ker Range, Queensland.

75. *Duncker on the Migration of Birds.*

[Wanderzug der Vögel. Von Hans Duncker. Jena, 1905. 8vo. Pp. i–ix, 1–118; 2 maps.]

This pamphlet consists of an essay on the migration and lines of flight of birds, which obtained a prize at Göttingen. It reviews the whole subject under two heads—how the birds go and why they go,—and discusses the views of all the best-known authors. Moreover, it brings under consideration the height at which birds fly (as much as 1000 m.) and the speed of their flight (not over 100 km. per hour), the effect of meteorological conditions on migration, and so forth.

76. *Harting's 'Recreations of a Naturalist.'*

[Recreations of a Naturalist. By James Edmund Harting. With eighty-one illustrations. London: T. Fisher Unwin, 1906. 8vo. Pp. i–xvi, 1–433. Price 16*s*. net.]

Mr. Harting is one of those writers who have the faculty of always interesting their readers, and we have had great pleasure in making use of the opportunity now afforded us of renewing our acquaintance with the essays contained in this volume, reprinted from 'The Field' and elsewhere. A large proportion of them treat of birds, and the author's favourite pursuit of hawking naturally leads the way, while the Norfolk Broads, the mud-flats of Pagham Harbour of old, Japanese art as regards birds, migration, shooting, Swan-upping, decoys, and so forth, furnish themes for the remainder. The illustrations are mainly from the original articles, but several have been specially prepared for this book.

77. *Hellmayr on the Birds of Trinidad.*

[On the Birds of the Island of Trinidad. By C. E. Hellmayr. Nov. Zool. xiii. pp. 1–60 (1906).]

The birds of Trinidad were ably discussed by Mr. Chapman in 1894 (*cf.* 'Ibis,' 1894, p. 436). The extensive collections forwarded by Mr. André and his collectors to the Zoological Museum of Tring from various parts of the island, and the specimens lately sent to the same institution by Dr. Percy Rendall from the districts of Savanah Grande and Tacarigua, have induced Mr. Hellmayr to undertake a fresh review of this attractive Ornis, which, according to his views, embraces 198 species and subspecies. Of these, the following eight are described as new or are provided with new names:—*Pachysylvia aurantiifrons saturata, Mionectes oleagineus pallidiventris, Pitangus sulphuratus trinitatis, Dysithamnus affinis andrei, Veniliornis kirki continentalis, Celeus elegans leotardi, Piaya cayana insulana,* and *Hydranassa tricolor rufimentum.* A new generic term, *Sclateria,* is provided for *Heterocnemis,* which is said to be "preoccupied."

The author is a vigorous disciple of the new school, and, like his associates, prefers "priority" to the rules of grammar and common sense. His "splitting" propensities may be estimated by the characters assigned to his *Veniliornis kirki continentalis,* which are simply "much smaller"! At the same time Mr. Hellmayr is a diligent and accurate worker, and has taken good advantage of the opportunities he has had of studying the rare American types in the Museums which he has visited.

Mr. Hellmayr is also an industrious student of locality, as all authors should be who make subspecies, and gives us much information on the subject. He states that what are commonly called "Trinidad skins" in the trade are probably made by the Warran Indians of the Venezuelan territory south of the delta of the Orinoco, and he is of opinion that the remarkable Humming-bird *Hylonympha macrocerca* of Gould comes from this district, and not from "Northern Brazil," wherein he is in all probability correct.

78. *The International Catalogue of Scientific Literature.*

[International Catalogue of Scientific Literature. Second Annual Issue—N. Zoology: Part III. Vertebrata, May 1905; and Third Annual Issue—Zoology: Part III. Vertebrata, November 1905.]

In a previous notice ('Ibis,' 1904, p. 645) we gave some account of the origin and scope of this important work, and ventured to offer some criticisms on the portion of the volume (N. Zoology) which relates to our special subject. We have now before us the second and third "Annual Issues" of the corresponding volumes, and will make a few remarks on them.

In the "Second Annual Issue," Part iii. "Vertebrata," we are pleased to see that running titles, which were absent in the "First Annual Issue," are introduced, so that it is now possible to distinguish the pages relating to "Pisces," "Aves," &c., without difficulty. The portion relating to "Aves" consists of 182 pages. It comprehends, *firstly*, a list of the titles of the works relating to birds in the alphabetical order of the authors' names, and, *secondly*, the same titles arranged according to their subjects. These subjects are much too numerous, and, in our opinion, in many cases badly selected. They should have been reduced by one-half at least. Moreover, it is quite unnecessary to reprint the whole title of the work under every heading of the Subject-Index. The author's name and a reference to the general list of titles would have been quite sufficient, and this plan (which is that of the 'Zoological Record') would have saved many pages of print. Under the present system some of the titles are given at full length four or five times over.

The "Third Annual Issue" of "Zoology, Part iii. Vertebrata," is stated to have been completed in MS. in June 1905, and is dated "November 1905"[*]. It is arranged on the same plan as the second. "Aves" occupy 142 pages. The preliminary list of titles is numbered throughout (which was not done in the "Second Issue"), and shews that 1260 books and memoirs are catalogued. These are mostly publications of 1903, though some of 1902 and 1904 are also entered.

Looking (casually) through the two volumes we certainly find fewer misentries and mistakes than in the "First Annual Issue." At the same time it is not difficult to detect errors which might have been easily avoided if the precaution had been taken of having the proofs read through by an "ornithological expert." It could hardly be expected that the "Referees" (Prof. Minchin and Mr. J. T. Cunningham), good men as they are, could understand all the technical terms of ornithology, but further aid could easily have been obtained.

One of the most useful parts of the last two volumes to the working ornithologist is the "List of New Genera and Species." But instead of quoting the exact book and page where these new terms are to be found, the only reference supplied is a (mysterious) number, which gives the place where the work in question is to be found entered in the Authors' Catalogue. Thus another index must be sought and searched in order to obtain the desired information, which might just as easily have been given direct.

We conclude with a most satisfactory announcement which is contained in the last Report of the Council of the Zoological Society. It is obviously a great waste of time and money to have *two* Records of the year's zoological work going on at the same time—one in the 'International Catalogue of Scientific Literature' and the other in the 'Zoological Record.' Beginning with the present year, therefore, the Council of the Zoological Society and the

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[*] The copy in the Zoological Society's Library is marked as received in January 1906.

International Council have agreed that the two Records shall, at any rate provisionally, be amalgamated, as described in the following paragraph of the Zoological Society's Report:—

"The annual issues of the 'Zoological Record' have long been regarded as amongst the most important services to Zoological Science rendered by the Society. The magnitude of the task has been increasing annually, and in recent years the Zoology Volumes of the International Catalogue of Scientific Literature, issued by an International Bureau under the auspices of the Royal Society, have to a certain extent covered the same ground. The Council have arranged for a provisional amalgamation of the two undertakings for a period of five years, beginning with the literature for the year 1906, to be published in 1907, and hope that the union will lead to increased efficiency and economy. The 'Zoological Record' Committee will remain responsible for the scientific side of the work, and the conjoint volumes will be issued with numbers and title pages in series with the existing 'Zoological Record,' so that, at the end of the period of five years, the Zoological Society may resume its independent control, if the amalgamation be not successful."

79. *Journal of the Federated Malay States Museums.*

[Journal of the Federated Malay States Museums. Taiping and Kuala Lumpur. Vol. i. nos. 1, 2, 3. Jan.–July 1905.]

This newly-established Journal of the Federated Srates in the Malay Peninsula contains several articles on birds by Mr. Herbert C. Robinson, the lately appointed Curator of the Selangor State Museum, which merit our attention.

In the first number Mr. Robinson gives a List of a collection of Birds from Negri Sembilan, which has been already noticed ('Ibis,' 1905, p. 284). In the second number he commences a useful List of the Birds at present known to inhabit the Malay Peninsula south of the Isthmus of Kra. He begins with the Pigeons, of which he enumerates 21 species as occurring in the district, and adds various remarks about exact localities and other particulars.

In the third number the descriptions of *Myiophoneus* *robinsoni* Grant (Bull. B. O. C. xv. p. 69) and *Arboricola campbelli* Robinson (ibid. p. 28, and 'Ibis,' 1905, p. 165, pl. iv.) are reprinted as being of new Malayan species.

80. *Judd on the Quails, Grouse, and Turkeys of the U.S.*

[(1) The Bobwhite and other Quails of the United States in their Economic Relations. By S. D. Judd. Bull. Biol. Survey, No. 21. Washington, 1905.

(2) The Grouse and Wild Turkeys of the United States, and their Economic Value. *Id. op. cit.* No. 24.]

These two pamphlets, prepared by Mr. Judd, an Assistant in the Biological Survey section of the Department of Agriculture of the U.S. Government, give a methodical and well-written account of the Gallinaceous Birds belonging to the several groups specified in their titles. The economical relations of the birds are specially commented upon, and much information is given as to their food, the exact nature of which has been determined by a careful examination of their stomachs. It is shown that all these game-birds devour large quantities of insects, and are thus of advantage to agriculture. The "Bobwhite" (*Ortyx virginianus*), however, is presumably a seed-eater, more than 50 per cent. of its food being found to consist of seeds. Many of these seeds are those of injurious plants with which the farmer is constantly at war. Here again the "Bobwhite" is the farmer's friend. At the same time this bird is valuable as an article of diet. Its flesh is stated to be "juicy, tender, delicately flavoured, easily digested, and nutritious."

In the same way the economical value of Grouse and Turkeys is shown in the second pamphlet, in which the essential part that many of these birds play in checking the increase of noxious weeds and insects is enlarged upon.

81. *McGregor's Notes on Philippine Birds.*

[(1) Birds from Mindoro and small adjacent Islands, and (2) Notes on Three rare Luzon Birds. By Richard C. McGregor. Bureau of Gov. Lab., No. 34. Manila, 1905.]

Mr. McGregor, the Collector of Natural History specimens for the Government Laboratories at Manila, continues his work (see above, p. 200) and gives us an account of the birds met with during an expedition in the northern part of Mindoro in March, April, and May, 1905. Short field-notes are added, and two species (*Chætura dubia* and *Edoliosoma elusum*) are provided with new names. Lists of the birds obtained on some small islands near Mindoro are given, in the course of which *Chibia worcesteri* is described as new.

The second paper records the existence of *Antigone sharpei*, *Botaurus stellaris*, and *Zosterornis nigrocapitatus* in Luzon. A series of 18 black photographic plates illustrates the first paper and amongst other objects contains several views of the nest of *Artamus leucorhynchus*, a species found "abundant near Balete" and breeding in April.

82. *McGregor and Worcester on Philippine Birds.*

[A Hand-list of the Birds of the Philippine Islands. By Richard C. McGregor and Dean C. Worcester. Bull. Bureau Gov. Lab. Manila, 1906. 8vo. 122 pp.]

This very useful List of the Philippine Birds, so far as they are yet known, was projected by Mr. Worcester four years ago, but has been hindered in its progress by his official duties. When Mr. McGregor became Collector of Natural History in the Philippines, the matter was handed over to him, together with a MS. on the same subject prepared by Dr. F. S. Bourne and Mr. Worcester, from which it was hoped that some further information might be obtained. When Mr. McGregor returned to the U.S. in August 1905, the memoir was finally edited and seen through the press by Mr. Worcester.

The Preface, dated at Manila by Mr. Worcester in September 1895, contains a short sketch of the Zoological Divisions of the Philippine group, which, according to his views, are twelve in number. "While these twelve divisions are by no means zoologically equivalent, each has its highly-characteristic species and forms a fairly natural division."

The systematic list follows the arrangement of the 'Hand-list' of Dr. Bowdler Sharpe, and gives references to the descriptions of all species yet recorded as met with in the Philippine Area, including the Palawán Group. The list of this Avifauna published by Mr. Worcester and Dr. Bourne in 1898 * included 213 genera and 596 species. The present list raises the total number to 284 genera and 691 species, besides a few more not yet identified.

As, however, will be manifest from Mr. Ogilvie-Grant's paper in the present number of 'The Ibis,' it is obvious that there is still much more work to be done in the exploration of this attractive Avifauna.

83. *Marshall on the Anatomy of* Phalænoptilus.

[A Study of the Anatomy of *Phalænoptilus* Ridgway. By Margaret E. Marshall. Proc. Am. Phil. Soc. xliv. pp. 213–240 (1905).]

This is an exhaustive memoir on the anatomy of a rare and little-known North-American Goatsucker, *Phalænoptilus nuttalli*, based on two female specimens obtained in Texas. It is well illustrated by three plates with numerous figures, and is "intended to be the first of a series" dealing with the "Caprimulgi," *i. e.* the three families Caprimulgidæ, Steatornithidæ, and Podargidæ. When the other genera of these families have been treated in a similar way the results may be of considerable systematic value. At present they appear to be rather meagre. It is not even shown how *Phalænoptilus* differs from *Caprimulgus*.

84. *Martorelli on the Variations of* Dendrocopus major.

[Il *Dendrocopus major* Linn. e le sue variazioni. Nota ornitologica del Socio Prof. Giacinto Martorelli. Att. Soc. Ital. di Sc. Nat. xlvi. Milano, 1906. 14 pp.]

The Turati Collection at Milan contains a good series of the Great Spotted Woodpecker (*Dendrocopus major*) and the allied forms. Dr. Martorelli has used these specimens and others in his own collection as the material for his present memoir. This widely-extended species has been divided by Dr. Hartert (Nov. Zool. vii. p. 530) into some 15 or 16 subspecies, but Dr. Martorelli is of opinion that in certain of these forms the differences pointed out may be merely individual. Students of this group of birds should not fail to consult Dr. Martorelli's criticisms.

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* See Pr. U.S. N. Mus. p. 549.

85. *Mearns on new Philippine Birds.*

[Descriptions of a new Genus and Eleven new Species of Philippine Birds. By Edgar A. Mearns. Pr. Biol. Soc. Wash. xviii. p. 1 (1905).]

Leonardia woodi is a new genus and species of Timeliine birds from Mindanao. The other species described in this paper are *Pseudotharrhaleus griseipectus, Brachypteryx mindanensis, Macranous mindanensis montanus, Æthopyga boltoni* (all from Mt. Apo, Mindanao), *Cyrtostomus dinagatensis* (from Dinagat), *Merula kelleri* (from Mt. Apo), *Gerygone rhizophora* (from Zamboanga), *Anthreptes cagayanensis* (from Cagayan), *Muscicapula montigena* and *Pardaliparus elegans mindanensis* (from Mt. Apo). These are all out of a collection made during a year's residence in Mindanao by Major Mearns and his friends, who have contributed a large general collection of Philippine Birds to the U.S. National Museum.

86. *Oberholser on the Genus* Bleda.

[The Avian Genus *Bleda* and some of its Allies. By Harry E. Oberholser. Smiths. Misc. Coll. iii. pp. 149–172 (1905).]

We agree with Mr. Oberholser that the group of Pycnonotidæ called *Bleda,* or until recently *Xenocichla,* is a "very heterogeneous assemblage," and requires close study and rearrangement. But whether he has improved matters by creating *eleven* new generic terms and merely giving lists of the species is a matter of opinion. It would have been better if every species had been described, or if, at any rate, Mr. Oberholser had stated what are the species that he knows from a personal examination of specimens. But there is no clue to this.

Besides the already established genera *Trichophorus, Alophoixus, Bleda, Bæopogon, Ixonotus, Phyllostrephus, Chlorocichla, Stelgidillas, Andropadus,* and *Eurillas,* Mr. Oberholser proposes the following new generic terms :—*Idiocichla* (type *Trichophorus notatus*), *Thescelocichla* (type *Phyllostrephus* *leucopleurus*), *Atimastillas* (type *Hæmatornis flavicollis*), *Prosphorocichla* (type *Phyllostrephus scandens*), *Argaleocichla* (type *Trichophorus icterinus*), *Thapsinillas* (type *Criniger affinis*), *Acritillas* (type *Criniger ictericus*), *Arizelocichla* (type *Xenocichla nigriceps*), *Calyptocichla* (type *Criniger serinus*), *Charitillas* (type *Andropadus gracilis*), and *Stelgidocichla* (type *Andropadus latirostris*). *Phosphorocichla scandens acedis* (from Gaboon) is described as a new subspecies.

The paper concludes with a useful key to the genera treated.

87. *Ogawa on Birds from the Japanese Islands.*

[Notes on Mr. Alan Owston's Collection of Birds from the Islands lying between Kiusiu and Formosa. By M. Ogawa. Ann. Zool. Jap. v. part 4 (1905).]

Two taxidermists of the well-known naturalist Mr. Alan Owston, of Yokohama, visited the long chain of islands lying between Kiusiu and the north point of Formosa during the period from May to December 1904, and made collections of birds on ten of them. The entire series thus amassed consists of 1669 well-preserved skins, referred by Mr. Ogawa to 124 species and subspecies, of which an account is now given. Three of these are described as new species (*Geocichla major*, *Picus owstoni*, and *Nannocnus ijimai*) and three as new subspecies (*Merula celænops yakushimensis*, *Zosterops japonicus insularis*, and *Corvus macrorhynchus osai*). Besides these, two species are added to the Avifauna of the Japanese Empire—*Merops ornatus* and *Spilornis pallidus*, both visitors from the south. But by far the most interesting fact recorded in this paper is the re-discovery of *Garrulus lidthi*, of which 12 specimens were obtained by Mr. Owston's collectors in the island of Amami-Oshima. This famous species of Jay had been lost sight of ever since its original description by Bonaparte in 1850, and no one knew whence it came. Mr. Ogawa concludes his memoir with a very useful table of all the birds known at present from the chain of islands between Japan and Formosa, giving the exact localities for each of them. Coloured figures are added of *Garrulus lidthi*, *Picus owstoni*, and *Nannocnus ijimai*.

88. *Oustalet on Birds from Lake Tchad.*

[Catalogue des Oiseaux rapportés par la Mission Chari-Lac Tchad. Par M. Oustalet. Bull. Mus. d'Hist. Nat. x. pp. 131 et 536 (1904), et xi. p. 10 (1905).]

This is a list of the birds collected by the French expedition to Lake Tchad and the Shari River under the leadership of M. Chevalier. One hundred and seven species are enumerated, mostly well-known West-African forms, but *Cinnyris decorsei* is described as new.

89. *Petényi's 'Ornithological Fragments.'*

[Ornithologische Fragmente aus den Handschriften von Johann Salamon von Petényi. Deutsch bearbeitet von Titus Csörgey. Mit einer Einleitung von Otto Herman. Gera-Untermhaus, 1905. Pp. i-xxxvi, 1-400.]

Herr Csörgey gives us here a German translation of the ornithological notes of Herr Petényi, once Curator of the Hungarian National Museum, who appears to have intended to write a full account of the birds of his country. There were considerable gaps in the manuscript, where possibly notes had been lost, but the portions left are quite sufficient to shew the value of the author's work. Born in 1799, he seems to have been well acquainted with the writings of the German ornithologists of his time, and to have been an ardent student of classification, as well as of all other matters relating to Hungarian Birds.

90. *Pratt's 'Two Years in New Guinea.'*

[Two Years among New Guinea Cannibals—a Naturalist's Sojourn among the Aborigines of unexplored New Guinea. By A. E. Pratt. London: Seeley & Co., 1906. 1 vol., 8vo. Price 16*s.* net.]

Although we are aware that some of Mr. Pratt's stories have been severely criticized, we think that most Naturalists will read the narrative of his adventures among the aborigines of British New Guinea with interest; but it is a pity that he does not tell us more about the birds and other animals of that strange land. Mr. Pratt's main object was to search for Lepidopterous Insects*, and in this he was very successful; but he also obtained a series of Paradise-birds, and devotes a short chapter to this subject, with a list of the species met with and a few remarks on their habits. The prize-bird of the district visited seems to be *Paradisornis rudolphi*, but *Astrapia stephaniæ* and *Loria loriæ* are also there. "Bird-of-Paradise soup," we are told, is "truly abominable."

91. *Pycraft on the Position of the* Eurylæmidæ.

[Contributions to the Osteology of Birds.—Part VII. Eurylæmidæ; with Remarks on the Systematic Position of the Group. By W. P. Pycraft, F.Z.S., M.B.O.U. P. Z. S. 1905, vol. ii. pp. 29–56.]

Forbes and Garrod are our principal authorities on the systematic position of the anomalous family Eurylæmidæ. They were of opinion that the peculiarities of this group, especially as regards the retention of the plantar vinculum, were so great as to necessitate its separation as a main division of the Order Passeres, which might be termed "Desmodactyli," while all the other Passeres were designated "Eleutherodactyli." This proposal has met with more or less acceptance up to the present time, and in the fourteenth volume of the 'Catalogue of Birds' the Eurylæmidæ were placed by Sclater at the end of the Oligomyodian Passeres as an aberrant group.

In the present paper Mr. Pycraft treats of the osteology of the Eurylæmidæ at full length, and comes to the conclusion that it is doubtful whether so wide a separation of this group from the other Passeres as has been proposed by Garrod and Forbes is maintainable. "The survival of the plantar vinculum is not so very surprising." Mr. Pycraft enlarges upon the many resemblances between the Eurylæmidæ and the Cotingidæ, and thinks it quite possible that future investigations may prove that the former are entitled to no higher position than a subfamily of the latter group.

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* See Mr. Bethune Baker's paper on Mr. Pratt's collections of insects in Nov. Zool. xi. p. 367.

But for the present, at any rate, we think it would not be advisable to alter the *status* of this well-marked group of the Oriental Avifauna.

92. *Pycraft on the Skeleton of the Musk-Duck.*

[Notes on a Skeleton of the Musk-Duck, *Biziura lobata*, with Special Reference to Skeletal Characters evolved in relation to the Diving Habits of this Bird. By W. P. Pycraft, A.L.S., F.Z.S. Journ. Linn. Soc., Zool. xxix. p. 396 (1906).]

The skeleton of this anomalous Australian Duck is described and figured. The author comes to the conclusion that *Biziura* and the other stiff-tailed Erismaturinæ of Count Salvadori "should be merged in the Fuligulinæ," and that "the genera *Tachyeres, Harelda, Histrionicus, Œdemia, Heniconetta, Somateria,* and *Erionetta* might well be placed together in a separate subfamily—the Somateriinæ.

93. *Ralfe's 'Birds of the Isle of Man.'*

[The Birds of the Isle of Man. By P. G. Ralfe. Edinburgh, 1906. 8vo. Pp. i–xiii, 1–321. Price 18*s*. net.]

The Isle of Man, within a comparatively limited area, furnishes much that is of interest to ornithologists, more of whom have probably explored its wilds than Mr. Ralfe imagines, though he is quite right in thinking it full time that a comprehensive work on the Birds was published. The author's life-long knowledge of the island not only ensures the accuracy of his records of the occurrences of the various species, but also enables him to give accounts of their habits, while he has had the advantage of the assistance of several competent local observers.

We are much pleased with the book, and especially the excellent sketch of the Physical Features of Man, which reminds us of our own experiences there; while the History of Manx Ornithology, the Bibliography, and so forth are welcome additions to the detailed list. Most visitors cross to the island in summer, so that the winter notes and those on migrants are particularly valuable; but the comparisons instituted between the avifauna and that of the adjacent countries are also a feature of the book. The past history of more than one species is of the greatest interest; and in this connection we may mention the White-tailed Eagle, the Raven, the Chough, the Bittern, the Black and Red Grouse, and the "Manx" Shearwater (exterminated by 1827). There are two maps and fifty-one excellent illustrations, such as we are accustomed to expect in Mr. David Douglas's publications.

94. *Reiser's 'Ornis Balcanica,'* vol. iii.

[Materialen zu einer Ornis Balcanica, herausgegeben vom Bosnich-herzegowinischen Landes-Museum in Sarajevo.—III. Griechenland und die griechischen Inseln (mit ausnahme von Creta). Von Othmar Reiser, Kustos am Bosn-herzeg. Landes-Museum. Wien, 1905. 1 vol. sm. folio. Pp. 590.]

Ten years ago the Balkan Peninsula was, ornithologically speaking, one of the least-known portions of Europe. Thanks to the energetic work of our Foreign Member, Dr. Othmar Reiser, this sad condition of affairs has quite passed away. A goodly series of four volumes was planned by him some years ago for the illustration of the 'Ornis Balcanica,' and we have now the third of them before us. The first volume, relating to the Birds of Bulgaria, was published in 1894 (see 'Ibis,' 1895, p. 289); the second, on the Birds of Montenegro, in 1896 (see 'Ibis,' 1897, p. 280); and the third, with an account of the Birds of Greece, appeared at the close of last year. There remains only the fourth volume, on the Birds of Bosnia and Herzegovina, to complete the series.

Dr. Reiser, although he enjoyed the potent assistance of the veteran Dr. Krueper, did not sit still in his Museum at Sarajevo to compile his volume on the birds of Greece from other persons' notes, but took the field himself to explore its most interesting avifauna, and made three expeditions for that purpose in 1894, 1897, and 1898, besides employing the assistance of many excellent collectors in different places. The result was a series of 1617 specimens, referable to 294 species.

Dr. Reiser commences the present volume with a narrative of his three collecting-tours in Greece, in the course of which he visited nearly every part of that famous land and its islands, except Crete, which still remains almost ornithologically unknown. This is followed by a *résumé* of the previous literature on the subject, and by a complete list of the 312 species of Grecian Birds now known, in which the vernacular name in modern Greek and the first observer of each species in Greece are given. The main portion, or "Specieller Teil," of this volume of the 'Ornis Balcanica,' however, is devoted to a series of notes on the birds of Greece and its Islands, arranged in systematic order and occupying some 450 pages, which let in a flood of light upon the subject, and demand the careful attention of all students of European Ornithology.

Dr. Reiser, we are pleased to observe, does not find it necessary to make many new "subspecies," and employs trinomials only in exceptional cases. Amongst his many most interesting observations, we may notice the breeding of the Snow-Finch (*Montifringilla nivalis*) on Mount Vardusia, in Phthiotis, which has been already alluded to in this journal (see 'Ibis,' 1904, p. 226), and his explanations concerning *Parus lugubris græcus* (a southern form of *P. lugubris*) and *Dendrocopus medius sancti-johannis*, of both of which good coloured figures are given. A chart of Greece and its Islands, shewing Dr. Reiser's routes during his three expeditions, concludes this excellent volume, which is certainly one of the most important contributions that have been made for many years to our knowledge of Palæarctic Ornithology.

95. *Ridgway on new Genera and Species.*

[New Genera of Tyrannidæ and Turdidæ, and new Forms of Tanagridæ and Turdidæ. By Robert Ridgway. Proc. Biol. Soc. Washington, xviii. p. 211.]

Platytriccus is a new generic name for *Platyrhynchus cancroma* and other species of that genus which Mr. Ridgway separates from *P. rostratus*. *Haplocichla*, gen. nov., is based on *Turdus aurantius* Gm., of Jamaica, which Sclater and Salvin (Nomencl. p. 2) have placed in *Mimocichla*. A new *Chlorospingus* from the Volcan de Irazu, Costa Rica, is named *C. zeledoni*, and a new *Phœnicothraupis* from the same country *P. alfaroana*. *Mimocichla rubripes eremita* is a new subspecies from Swan Island, Caribbean Sea, and *Catharus frantzii omiltemensis* a new subspecies from South-western Mexico.

96. *Riley on Three new Venezuelan Birds.*

[Descriptions of Three new Birds from the Merida Region of Venezuela. By J. H. Riley. Proc. Biol. Soc. Washington, xviii. p. 219.]

The three new birds from the Merida district of Venezuela are designated *Leptasthenura montivagans, Haplospiza montosa*, and *Pheucticus uropygialis meridensis*. The last (allied to *P. uropygialis*) is based on a single specimen (!).

97. *Shelley's 'Birds of Africa.'*

[The Birds of Africa, comprising all the Species which occur in the Ethiopian Region. By G. E. Shelley, F.Z.S., F.R.G.S., &c. Vol. V. pt. 1. London: R. H. Porter, 1906. Price 31*s*. 6*d*.]

In the second part of his fourth volume (see 'Ibis,' 1905, p. 641) Capt. Shelley finished his account of the African Weaver-birds. In the present part of the fifth volume he gives us the history of the species of the three families Oriolidæ, Sturnidæ, and Corvidæ found within the limits of the Ethiopian Region.

Of the African Orioles only nine species are allowed as valid. *Oriolus meneliki* of Blundell and Lovat is united to *O. monachus, O. rolleti* of Salvadori to *O. larvatus*, and *O. lætior* of Sharpe to *O. brachyrhynchus*. The Starlings of Africa are much more numerous; Captain Shelley registers fifty-seven species, most of which belong to the beautiful group commonly called "Glossy Starlings." The number of genera into which these birds have been divided is rather reduced under Capt. Shelley's treatment, and we cannot but think that this is judicious. The thirteen chestnut-winged forms, which have been hitherto separated into no less than six genera, are now included under one generic term, *Onychognathus*. Whether *Hypocolius*, however, should be placed among the Sturnidæ is, we think, a little doubtful. Capt. Shelley does not give us any reasons for giving this position to what is an anomalous form, although it is certainly a true Passerine bird and has nothing to do with *Colius*.

Crows are not so plentiful in the Ethiopian fauna as Starlings. The author admits only nine species, of which the most remarkable are the two bare-headed *Picathartæ* of West Africa.

Seven well-drawn plates illustrate this volume, and represent the following species:—*Oriolus crassirostris*, *Cinnyricinclus femoralis*, *Cosmopsarus unicolor*, *Lamprocolius splendidus*, *L. cupreicaudus*, *L. purpureiceps*, *L. melanogaster*, *Spreo shelleyi*, *Onychognathus blythi*, *Pœoptera stuhlmanni*, and *P. kenricki*.

98. *Stone on Birds from Lower California.*

[On a Collection of Birds and Mammals from the Colorado Delta, Lower California. By Witmer Stone. With Field-Notes by Samuel N. Rhoads. Proc. Acad. Nat. Sc. Phil. 1905, pp. 672–690.]

Mr. Rhoads's trip in the delta of the Colorado River was made early in 1905, and resulted in a collection of birds and mammals, which are described in Mr. Stone's paper. The 258 specimens of birds are referred to 49 species, besides which about 50 others were observed by Mr. Rhoads, who contributes a certain number of field-notes. *Pipilo aberti*, *Phainopepla nitens*, and *Auriparus flaviceps* are amongst the rarer species in the list.

99. *Stone on Birds from British East Africa.*

[On a Collection of Birds from British East Africa obtained by Mr. George L. Harrison, Jr. *Id. t. c.* pp. 755–782.]

This is an account of a collection of birds made by Mr. Harrison in British East Africa in 1904, and deposited in the Museum of the Academy of Natural Sciences in Philadelphia. The collection was made by Mr. Harrison and his taxidermist at Nairobi, Fort Hall, Naivasha, on the

Guaso Nyiro, and in other localities in the central part of the Protectorate. It contains examples of 212 species, one of which is believed to be new and is described by Mr. Stone as *Cisticola harrisoni*.

100. *Thayer and Bangs on the Birds of the Pearl Islands.*

[The Mammals and Birds of the Pearl Islands, Bay of Panama. By John E. Thayer and Outram Bangs. Bull. Mus. Comp. Zool. xlvi. no. 8 (1905).]

The authors describe the birds collected on the Pearl Islands, in the middle of the Bay of Panama, by Mr. W. W. Brown, Jr., during a second * visit in 1904. The birds are in most cases closely allied to the corresponding forms of the adjacent mainland; but one of the Humming-birds (*Phaethornis hyalinus*) and an Ant-Wren (*Formicivora alticincta*) are distinct species peculiar to these islands. Ninety-four forms are enumerated, of which two (*Myiobius nævius furfurosus* and *Tanagra cana dilucida*) are now separated as "subspecies."

101. *Thayer and Bangs on the Birds of Panama.*

[Vertebrata from the Savana of Panama. Aves. *Iid. t. c.* no. 12 (1906).]

The "Thayer Expedition" of 1904 spent a month near the city of Panama, and made a collection of Vertebrates on the adjoining savanna. The birds obtained on this occasion are referred by the authors to eighty-six species, of which three are described as new—*Momotus conexus, Tyrannulus reguloides panamensis,* and *Tiaris olivacea dissita*.

102. *Van Oort on the Red-crested Pochard.*

[Ueber das Vorkommen von *Netta rufina* (Pall.) in Holland. Von Dr. E. D. Van Oort. Notes Leyd. Mus. xxvi. pp. 196–199.]

The author records a male of this Duck in summer plumage from Nieuwkoop in South Holland, August 8th, 1905, being the tenth example known from that country.

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* *Cf.* Bangs, 'Auk,' xviii. pp. 24–32 (1901).

103. *Van Oort on a new Bird-of-Paradise.*

[On a new Bird-of-Paradise. By Dr. E. D. Van Oort. Notes Leyd. Mus. xxviii. p. 1 (1906).]

Heer Van Oort, who has succeeded Dr. Finsch in the care of the birds of the Leyden Museum, describes, under the name of *Neoparadisea ruysi*, a new Paradise-bird related to *Paradisea* and *Diphyllodes*, from a specimen presented to the Museum by Mr. T. H. Ruys. It was obtained by native hunters in 1905, near Warsembo, on the west coast of the Bay of Geelvink.

Heer Ruys also brought home a skin of the rare *Diphyllodes gulielmi-tertii*.

XXXIV.—*Obituary.*

Canon Tristram, Dr. Jean Cabanis, and Dr. Victor Fatio.

With deep regret we record the death of the Rev. Henry Baker Tristram, F.R.S., Canon of Durham, one of the founders and original members of the British Ornithologists' Union. Canon Tristram was well known as an Author, a Traveller, a Naturalist, and an Antiquarian. It is, of course, to his work in Natural History that we shall mainly allude on the present occasion.

Canon Tristram was born on May 11th, 1822, at Eglingham, near Alnwick, the large country parish of which his father, Dr. H. B. Tristram, was at that time Vicar. He was educated at Durham School, and afterwards at Lincoln College, Oxford, where he graduated in 1844, taking a second class in Classics.

In 1845 Tristram was ordained Deacon by the Bishop of Exeter, and Priest in the following year, having been appointed Curate of Morton Bishop. But, shewing somewhat alarming signs of a weak chest, he was ordered abroad, and passed two years (1847–1849) as naval and military chaplain in Bermuda. In the latter year he was nominated Rector of Castle Eden, in Durham, and in 1860 Master of Greatham

Hospital and Rector of Greatham, where he remained until 1873, when he was appointed Canon of Durham, and resided in that city until his decease on the 8th of March last. We will now turn to his ornithological and other scientific work and publications.

From his early youth devoted to Natural History, Tristram, like many of us, commenced his writings on this engrossing subject in the 'Zoologist,' the first being "On the Occurrence of the Little Auk in Durham," published in 1853 (Zool. p. 3753). Other short notes in the same periodical followed in 1854, 1856, 1859, and 1861. His first visit to Algeria was made in the winter of 1855–6, and in the following winter, having acquired the favour of Marshal Randon, the French Governor-General, he was enabled to push his excursions across the Atlas far into the interior of the Sahara, where, as he tells us, he found an "atmosphere bright, dry, and invigorating," which exactly suited his case. It was, in fact, to the two winters passed in Algeria that he always attributed his recovery from the malady which had threatened him.

The results of these expeditions were the excellent series of papers on the ornithology of Northern Africa published in this Journal in 1859, 1860, and 1861, and the very attractive volume on his journeyings in the "Great Sahara," issued in 1860, which, in our opinion, may fairly claim a place of the very highest rank among the narratives of travels of Naturalists.

Another part of the world to which Tristram devoted special attention was Palestine. It was in the early part of 1858 that he first landed there, during a yachting visit to the Mediterranean. His ornithological notes written on this occasion were published in the first volume of 'The Ibis,' to which he was always a constant contributor. Several other winter-visits to Palestine followed, and in 1863 he stayed on in the Holy Land until the following summer. This visit was the chief origin of his instructive and charming volume on 'The Land of Israel,' published by the Society for Promoting Christian Knowledge in 1865.

In 1872 Tristram was again in Palestine, and pushed his travels beyond the Jordan. On this occasion he discovered the ruins of the great Persian Palace at Mashita, built by Chosroes about A.D. 614, which had been previously almost forgotten. Upon this journey he founded his interesting volume on 'The Land of Moab,' which was published in 1873.

Tristram's next trip to Palestine was in 1881, when he travelled from Jaffa to Hebron, and thence turned northwards to Damascus. From Damascus he made a long excursion across the Euphrates, and visited "Ur of the Chaldees." In 1894 he was again in Palestine, and again in 1897. It was on this last visit that, while riding with a party of friends near Jerusalem, he had his leg broken by the kick of a vicious horse. This would have finished off most men of the age of seventy-two. But such was not the case with our friend Tristram. After a few weeks in the hospital at Jerusalem he was pronounced to be sound again, and returned to England as full of energy and spirits as ever.

In all these journeyings, however, it must not be supposed that Tristram ever lost sight of his "dear birds." They were continually in his mind, and he was always collecting specimens and writing notes about them. In the pages of this Journal and elsewhere will be found upwards of seventy papers of more or less importance relating to his favourite subject. So far as regards Palestine, these notes will be found summarized and placed in systematic order in his great work on the 'Fauna and Flora of Palestine,' published by the Palestine Exploration Fund in 1884. This lasting monument of Canon Tristram's industry and learning is still the only published work dealing with the Natural History of the Bible-lands as a whole, and is likely long to remain so. A smaller and more popular work of Tristram's on the Natural History of Palestine, together with an account of its Geography, Geology, and Meteorology, was published by the "Society for Promoting Christian Knowledge" in 1867, and has gone through several editions.

But Tristram by no means confined his ornithological labours to one or two spots on the globe. He visited Norway, and was also indefatigable in amassing specimens from all quarters, while he was specially interested in obtaining them from remote oceanic islands and similar strange places. In 1889 he had got together over 17,000 specimens, and prepared and printed a catalogue of them. Many of them were of great rarity (e. g. *Nestor productus, Camptolæma labradoria, Monarcha dimidiatus*) and almost unknown elsewhere. Some years afterwards, fearing that on his death his famous collection might be dispersed, he came to an arrangement with the authorities of the Free Public Museums of Liverpool to take over the whole of his series of birds. In the Report of the Committee of this Institution for 1896 will be found a short account of this important acquisition, which is described as containing "20,000 specimens referable to 6,000 species, of which 150 are types."

About the same time the Canon's large and valuable collection of birds' eggs was disposed of to the late Philip Crowley, of Waddon House, Croydon. At Crowley's death, in 1901, it was directed that the whole of his collection of eggs should be at the disposal of the British Museum. All the valuable and important specimens of birds' eggs in the Tristram Collection will now, therefore, be found in the Cabinets at South Kensington.

Tristram's name and fame are well commemorated by several birds that bear his surname as their specific title. Among these the most appropriate to him is Tristram's Grakle (*Amydrus tristrami*), discovered by the traveller himself in the rocky gorges of the Dead Sea in January 1864 *. It belongs to an otherwise exclusively African group of Starlings, of which it is the sole representative in Asia, and was dedicated by Sclater to its discoverer.

Tristram was elected a Fellow of the Royal Society in 1868, and was also a Fellow, Member, or Correspondent of a number of other scientific and learned Societies at home and abroad.

* See 'The Land of Israel,' p. 209.

On the 5th of February, 1901, Canon and Mrs. Tristram celebrated their Golden Wedding. After this epoch Tristram dwelt principally at home in Durham, making occasional visits to London, where he attended the Anniversary Meeting of the British Ornithologists' Union in May 1903, and the dinner in the evening. Canon Tristram died "full of age and honours" in his residence at Durham, on March 8th, 1906, to the great sorrow of a wide circle of relatives, friends, and acquaintances, who appreciated the high qualities and many-sided knowledge of this remarkable man.

JEAN LOUIS CABANIS, an Honorary Member of the Union, known to many of us personally and to all of us as the Founder and for forty-one years Editor of the 'Journal für Ornithologie,' was, according to information kindly sent to us by Herr Herman Schalow, born in Berlin on the 8th of March, 1815. He was of French origin, and belonged to a Huguenot family, which migrated into Mark Brandenburg in the days of the Great Elector. Cabanis went to school in Berlin, and studied at the University there from 1835 to 1839 under Johann Müller and Heinrich Lichtenstein. After finishing his University career he went on a voyage to North America, where he passed some time in South Carolina. On returning home in 1841 he was nominated by Lichtenstein Assistant in the Zoological Museum of the University, and in the year 1849 was promoted to be First Custos of the same Institution. Here he remained until his retirement in 1892, serving under Lichtenstein, Peters, and Möbius with equal zeal and fidelity, and editing the well-known Journal which he had planned and founded in 1843. Amongst other Ornithologists who were his pupils during this long period, or, at all events, came more or less under his guidance, we may mention the well-known names of Reichenow, von Tschusi, Stejneger, Berlepsch, Gadow, Fischer, Böhm, Kollibay, Hartert, Matschie, König, and Leverkühn.

The first important piece of ornithological work undertaken by Cabanis was his collaboration with Dr. J. J. v. Tschudi in the "Aves" of the 'Fauna Peruana' (1845–6). Peru was a little-explored country in those days, and we can well understand that assistance from the Berlin Museum was of much value to the author. Cabanis's contributions to the 'Fauna Peruana' are mostly printed in footnotes, but it is evident that he exercised a general supervision over the whole of the text.

In 1847 Cabanis published in 'Wiegmann's Archiv' two parts of a remarkable memoir on the classification of the Passeres, in which it was first shown that two points previously almost neglected (the mode of scutellation of the tarsus and the number of the wing- and tail-feathers) were available for the subdivision of this great Order. These characters were further explained and utilized by Cabanis in subsequent publications, and are now generally allowed to be of leading importance. In 1848 Cabanis prepared the section relating to "Birds" for Schomburgk's 'Fauna and Flora of British Guiana'—the first systematic work on that subject, and even in these days often quoted and referred to as the best authority on the zoology of the country.

Two years later Cabanis began the 'Museum Heineanum,' perhaps the most important work he ever wrote, containing an account of the very extensive collection of birds belonging to Ferdinand Heine of Halberstadt and kept in his private museum. In this work, the last part of which was issued in 1863, numerous new genera and species were described and a large number of critical notes of every kind were introduced, while the system of classification which Cabanis advocated was fully set forth.

Other important memoirs and papers by Cabanis are his account of the birds of Cuba obtained by Gundlach (J. f. O. 1854–57); of those of Costa Rica from the collections of Hoffman and v. Frantzius (J. f. O. 1860–2); of Baron von der Decken's collection from East Africa (1869); of Schulz's Argentine collections (1883); and, in conjunction with Dr. Reichenow, of the ornithological results of the 'Gazelle' Expedition (1876). There are besides a number of other shorter papers and notes, which testify to his untiring devotion to birds throughout his active life. Altogether he is said to have made 216 new genera and to have described 422 new species. From personal experience, the writer can say that Cabanis's knowledge of birds was extraordinary, and that, with the possible exception of John Gould, few ornithologists that he has known were able to pick out a new form from a collection with greater facility than Cabanis.

In 1892, after fifty years' service in the Berlin Museum, Cabanis celebrated his *jubileum* and retired into well-earned rest. The editorship of the 'Journal für Ornithologie,' which he had commenced in 1853, was shortly afterwards transferred to Dr. Reichenow, his son-in-law and successor, by whom it is still carried on, as our readers know, with unremitting energy and well-deserved success.

Twenty-three birds bear the specific name "*cabanisi*," bestowed on them by various authors, and serve to perpetuate Cabanis's services to Ornithology.

Cabanis was elected an Honorary Member of the British Ornithologists' Union in 1860, at the first Anniversary Meeting after the Union was constituted, and at his decease was the only Honorary Member left of that early date. He was likewise, we need hardly say, a member or associate of all the leading Societies that have the promotion of Zoology as their object.

After his retirement from his official duties Cabanis lived at his private residence at Frederichshagen, near Berlin. In August 1901 he attended the International Zoological Congress at Berlin, where the writer of this notice had the pleasure of greeting him, apparently in excellent health.

Cabanis died after a short illness at his own residence, on the 20th of February last, at the age of ninety years and eleven months.—P. L. S.

With much regret we have also to record the death of one of our Foreign Members, Dr. VICTOR FATIO, of Geneva, well known to most of us as one of the leading authorities on the Birds of Switzerland.

Victor Fatio was born at Geneva on the 28th of November, 1838, and, on completing his studies at the Gymnasium and Academy there, proceeded to Zurich and afterwards to the Universities of Berlin and Leipzig. At Leipzig he was a pupil of Dubois Reymond, and obtained his Doctorship in Philosophy by his thesis "*De Avium corpore pneumatico.*" After accomplishing his term of military service Fatio was laid prostrate by a serious attack of typhus, the effect of which was a complete loss of memory. This obliged him to recommence his studies, which he did with great zeal, passing a year at Paris, under the guidance of Henri Milne-Edwards, in the Museums and Laboratories of the Jardin des Plantes. Returning to Geneva in 1862 he thenceforth devoted himself to the Natural History of his native country. Associated with Henri de Saussure and other savants, he was long and deeply engaged in the study of the *Phylloxera*, and was for nineteen years President of the Federal Commission on that important subject sitting at Berne. Amongst these and many similar occupations, however, he never forgot his favourite birds, being President of the "Société Ornithologique Suisse," and representing his country at the Ornithological Congresses of Vienna, Budapest, Paris, and London.

In his labours on the birds of Switzerland, Fatio was closely associated with Prof. Studer of Berne, and in conjunction with him prepared and published a Catalogue of Swiss Birds ('Katalog des Schweizerischen Vögel, Catalogue des Oiseaux de la Suisse'), which appeared in three parts in 1889, 1894, and 1901. But a still more important work is the 'Histoire Naturelle des Oiseaux,' which forms two volumes of Fatio's 'Faune des Vertébrés de la Suisse,' and is the most complete and trustworthy account of the birds of Switzerland. The first volume of this work was issued in 1899, the second, lately noticed by us ('Ibis,' 1905, p. 120), in 1904.

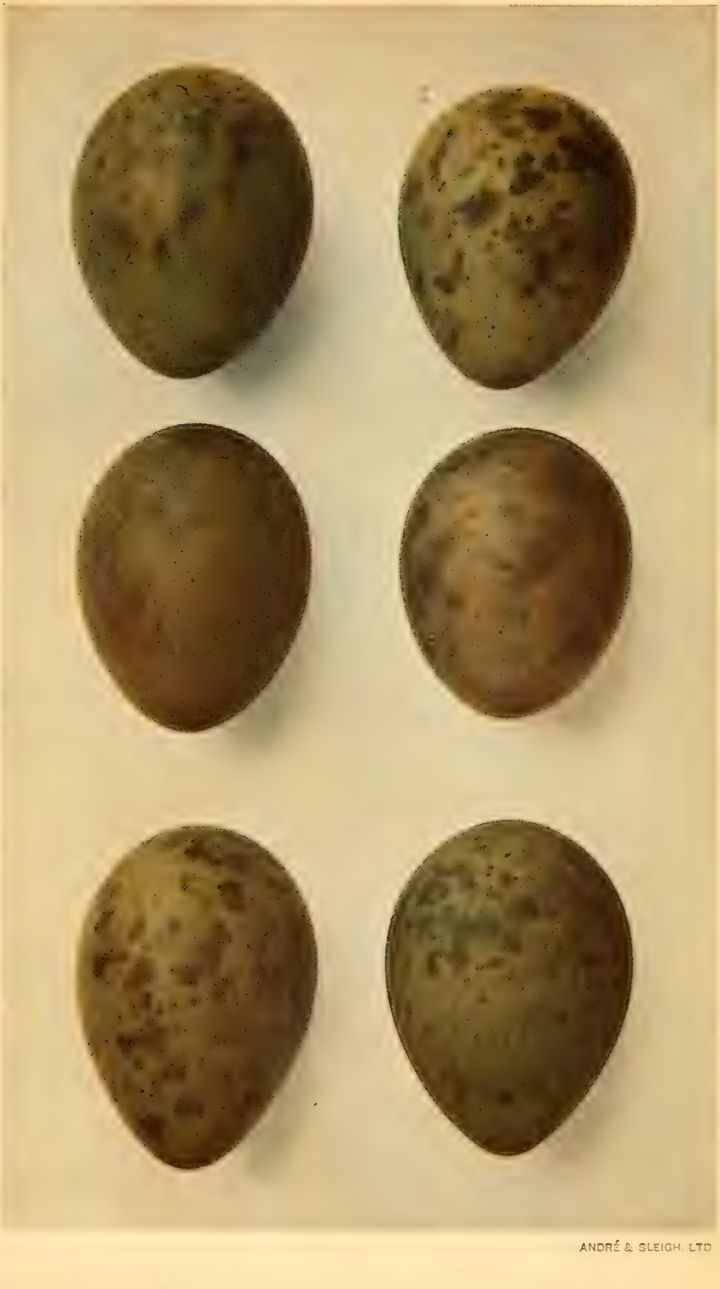
Fatio was elected a Foreign Member of the British Ornithologists' Union in 1872, and a Corresponding Member of the Zoological Society of London in 1897. His learning and industry were much appreciated all over the Continent; he was made a Commander of the Royal Order of Christ of

Portugal, and received many other Orders and Honours from Austria, France, Germany, Italy, Russia, Servia, and Spain. His last communication to this Journal ("Sur le Waldrapp de Gessner") appeared as lately as January of this year (see above, p. 139), and we have been informed that he continued his usual work nearly up to the time of his decease, which took place at Geneva on the 18th of March last, in the 67th year of his age.

XXXV.—*Letters, Notes, and Extracts.*

We have received the following letters addressed to "The Editors of 'The Ibis'":—

Note on the Eggs of Ross's Rosy Gull (Plate XX.).—In a previous number of this Journal ('Ibis,' 1906, pp. 131–139) Mr. S. A. Buturlin gave us a most interesting account of his discovery of the breeding-grounds of the rare Ross's Gull (*Rhodostethia rosea*) in the delta of the Kolymá River in North-eastern Siberia. I have now received from him some of its eggs, sent in order that I might have them figured, as they are undoubtedly the first authentic eggs of this species that have as yet been received in Europe. In the article above referred to Mr. Buturlin has given such full particulars of the nidification and breeding-habits that I need say nothing further here, except to remark that these eggs, as will be seen from the figures (Plate XX.), cannot be mistaken for those of any other Gull, except perhaps those of *Xema sabinii*. From the latter, however, they may be distinguished by being decidedly green in the tone of their colour, whereas those of *Xema sabinii* are not so, and by having the surface of the shell dull and glossless, whereas the eggs of Sabine's Gull are somewhat glossy. Together with the eggs of *Rhodostethia rosea*, Mr. Buturlin has sent me eggs of the following species, viz.:—*Sterna macrura* (this being the species referred to in his article, p. 135 footnote), *Larus glaucus*, *Phalaropus fulicarius*, *Nettion*



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EGGS OF RHODOSTETHIA ROSEA.

formosum, *Anser gambeli*, *Anser serrirostris*, *Chelidon lagopoda*, *Anthus cervinus*, *Anthus gustavi*, *Motacilla viridis*, *Linota exilipes*, *Phylloscopus borealis*, and *Cyanecula suecica*, all taken by him at or near the mouth of the Kolymá River.—H. E. DRESSER.

SIRS,—I have just been looking over the January number of a monthly magazine (the 'Ornithologische Monatsschrift'), published at Dresden by the "Deutsche Verein zum Schutze der Vogelwelt." To my astonishment and disgust, I find (pp. 16–42, pls. i., ii., iii., iv.) an article on a trip to Iceland with four illustrations taken from photographs, one of which represents a collector gloating over 240 eggs of the Great Skua (*Megalestris catarrhactes*) obtained on that occasion. I have always looked on the above-named "Verein" as being a Society for the Protection of Birds, with similar views to those of the Royal Society for the Protection of Birds in this country. But if this be the case, how can the "Verein" have consented to the publication of such an article and illustration in their Journal, and how could the Danish authorities in Iceland have permitted such a vandalism, especially as they are supposed to be in favour of the protection (not destruction) of birds? The writer of the article in question is evidently a mere collector, probably employed by some dealer, as no true naturalist would need such a quantity of eggs of the same species. Nor would he be guilty of such a crime as to harry in this fashion the breeding-places of a bird which, in most parts of its nesting-range, is becoming so scarce as to need very careful protection in order to prevent its extinction.

Nothing is said in the article itself as to the number of eggs of the various species obtained, but, seeing that as many as 240 eggs of the Great Skua alone were taken, it may be supposed that every possible egg on the island that would be of any value to a dealer, more especially every egg of a rare species of bird that could by any means be secured, would be carried off. If such proceedings are tolerated by the

Authorities in Iceland, not only the Great Skua but every other rare bird which now breeds on that island will become practically extinct.

I am, Sirs,
Yours &c.,
H. E. Dresser.

28 Queensborough Terrace,
London, W.
19th April, 1906.

Note on Emberiza citriniventris.—I am sorry to find that, as has been pointed out to me by Mr. Witherby, the Bunting which I described and figured in the last number of this Journal (above, p. 313, Pl. XV.) as *Emberiza citriniventris* had been previously named by Mr. N. Sarudny in the 'Ornithologisches Jahrbuch' for 1904. There can be no doubt, I think, that Mr. Sarudny's *Emberiza* (*Hypocentor*) *semenowi* (*op. cit.* xv. p. 217), which was based on three specimens obtained by him in the Persian province of Arabistan in February and March 1904, is the same as my *E. citriniventris.*

The name given to this Bunting by Mr. Sarudny has undoubted priority, and I can only express my regret that I had unfortunately overlooked his clear description.—P. L. S.

The Wild Swan of Seistan.—In reply to enquiries about the specimen of the Wild Swan of Seistan sent to the Indian Museum by Sir Henry McMahon (see above, p. 398), the following letter has been received from Dr. Annandale:—

Sirs,—The specimen about which you enquire was presented to the Indian Museum some months ago. On receiving your letter I examined the skin, and compared it with that of a European *Cygnus musicus.* It appears to me to be a perfectly normal specimen of that species, the yellow on the bill extending well below the nostril. The size closely follows that of the European specimen with which I have compared it.
Nelson Annandale.

Indian Museum, Calcutta.
20th March, 1906.

Since this letter was received Dr. Annandale has kindly sent us a coloured sketch of the head of this specimen. We agree with him that it represents a not quite adult example of *Cygnus musicus*, and Mr. Dresser, who has examined the sketch, is of the same opinion. The Wild Swan of Seistan is, therefore, so far as we can say at present, *Cygnus musicus*.

Mr. Woosnam's Expedition to Ruwenzori.—Since the issue of our last number (see above, p. 400) good accounts have been received of Mr. Woosnam's Expedition to Ruwenzori, where a permanent camp had been established at a height of about 6000 feet. A letter from Mr. Carruthers, dated "Feb. 4th, Pinnacle Camp, Ruwenzori," says "everything is progressing well: the collection (of birds and mammals) is nearing one thousand specimens obtained in five weeks' collecting. Butterflies, moths, and beetles (besides) are pouring in, and our Doctor is putting together a good series of plants. We continue to have lovely weather, very little rain, and we hope that this may last another month at least."

Mr. Carruthers gives some account of an excursion up the mountain to the foot of the glacier, in which the party seems to have followed the trail made by Messrs. Maddox, Tegart, and Grauer (described in a letter to 'The Times' of April 14th last), and to have reached a height of about 14,000 feet. About 60 specimens of birds and mammals had been obtained, and amongst them was "a gorgeous Sun-bird, with a tail eight inches long, which haunts the valley just below the glacier." The explorers believe that this "is an entirely new bird."

We see that Mr. Woosnam and Mr. Carruthers have further distinguished themselves by making the first ascent of Ruwenzori (see 'Times,' June 1st, 1906).

Return of the 'Valhalla.'—The Earl of Crawford's steam-yacht the 'Valhalla,' R.Y.S., reached Cowes Roads on her return voyage on May 13th. After leaving Cape Town on

Feb. 8th (see above, p. 394) the 'Valhalla' passed up the Mozambique Channel, but was unable to visit the islands there (as had been intended) owing to bad weather. The next places landed at were, therefore, Mayotte, Comoro Islands, and Diego Suarez, N.E. Madagascar, at both of which collections were made. Thence the yacht proceeded to the islands of Glorioso, Assumption, and Aldabra, and subsequently to the Seychelles, where Mahé, Praslin, and Félicité were visited. The return home was made by the Red Sea and the Suez Canal. During the voyage Mr. Nicoll collected rather more than 500 specimens of birds, besides mammals, fishes, and other animals.

Mr. Nicoll and Mr. Meade-Waldo both attended the meeting of the B. O. C. on May 16th, and gave an account of their most interesting journey (see Bull. B. O. C. xvi. pp. 92–95).

Lord Crawford has presented the whole of the collections made during this voyage to the British Museum, and Mr. Nicoll is now engaged in working out the birds. We hope to be able to publish his account of them in one of the next numbers of this Journal.

Mr. Scott's Investigation of Bird-life.—Mr. W. E. D. Scott, the author of 'The Story of a Bird-lover,' writes to us on February 12th from "Shawnee on Delaware, Pennsylvania," the headquarters of the "Worthington Society for the Investigation of Bird-life," of which he is now Director, that he has been fully engaged in building operations during the past eighteen months. A series of indoor Aviaries "with spacious outdoor flights" has been completed, as also a library, a series of studies, a large laboratory, and rooms for the attendants and officers. Ten large outdoor aviaries are also ready, and twenty-five breeding-cages are in process of construction. In these will be carried on practical experiments in breeding, matters of heredity, and the like.

Committee of Inquiry on the Grouse-disease.—In April last year a Committee of Inquiry on the Grouse-disease was appointed by the Board of Agriculture, and requested to report whether any, and if so, what precautionary measures can be taken against it. Lord Lovat was appointed Chairman and Mr. A. S. Leslie (33 Queen Street, Edinburgh) Secretary to the Committee, and it was agreed that the necessary expenses should be raised by private subscription amongst those interested in the subject. Several meetings have been held during the past year, and Dr. Seligman, Mr. A. E. Shipley, F.R.S., and Dr. Hammond Smith have been selected as scientific experts, to aid in the inquiry upon technical questions. As chief Field-observer the Committee have appointed Dr. Edward Wilson (late of the Antarctic Expedition), assisted by the Rev. E. A. W. Peacock, who has made a special study of the food of game-birds. A large number of local correspondents have also kindly offered their services.

The Committee have been at work since last November. Curiously enough, there has been no fresh outbreak of the disease during the past year, but the Committee have an ample field of work before them.

Captain Boyd Alexander's Expedition.—Since we wrote in July last year of the progress of Captain Boyd Alexander's Trans-African Expedition (see 'Ibis,' 1905, p. 506) we have received a letter from him, dated at Irene, near the river Ba-Mingui, August 8th, 1905, stating that the party had made a good journey up the river Shari from Fort Lamy, and that, after exploring the Ba-Mingui, they would proceed to Yakoma on the Ubanghi. The bird-collection then numbered nearly 1400 specimens, amongst which were some novelties of great interest. Since that date, we have obtained information that the expedition had succeeded in crossing the water-parting into the Congo-Basin, and had arrived on the Ubanghi. The last letter received by Captain Alexander's family was dated from Mbima, on the river Welle, a confluent of the Ubanghi, whence it was thought that in about four months the travellers would be able to reach the Nile at Lado or Gondokoro. The boats which they had taken with them had received many rude knocks, but were still serviceable. They were expecting to leave Mbima the next day for Bomokande, a station about ten days farther up the Welle, and would thence proceed to Donga at the mouth of the Kibali, after which their exact course was rather uncertain.

Gaetke's Ornithological Diary.—In a special extra number of the 'Journal für Ornithologie' for this year is published a transcript of the Ornithological Diary kept by Gaetke on Heligoland from 1847 to 1887 inclusive, edited by Dr. Rudolf Blasius. The entries usually record the kind of weather and the principal birds obtained and observed each day, with their scientific names. In some years nearly every day has an entry; in other years there are very few, *e. g.* in 1865 only one. This record is of great interest, especially to students of migration, and will, no doubt, receive much attention as part of the material upon which the "Vogelwarte" was based.

The Muséum d'Histoire Naturelle, Paris.—We understand that the vacancy in the staff of Professors at the Jardin des Plantes, Paris, caused by the death of the late Emile Oustalet, has been filled by the appointment of Dr. E. L. Trouessart, the well-known author of the 'Catalogus Mammalium.' Dr. Trouessart will, like his predecessor, have the charge of the Mammals and Birds in the Muséum d'Histoire Naturelle as well as the superintendence of the collection of those animals living in the Jardin des Plantes.

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XXXVI.—*Field-Notes on the Birds of Chinkiang, Lower Yangtse Basin.*—Part II.* By J. D. D. La Touche, C.M.Z.S., M.B.O.U.

38. Lanius sphenocercus Cab.

Styan, Ibis, 1891, p. 348.

Once, on February 22, I saw a large grey Shrike in a bare reed-field. It was very wild and quite unapproachable, perching, after the long flights it made across the fields, on large trees bordering the reed-ground.

39. Lanius schach Linn.

Styan, Ibis, 1891, p. 347; La Touche & Rickett, Ibis, 1905, p. 37.

Common in winter on the plain and in the loess country, but not noticed in late spring or during summer. A few pairs most probably breed in the district in suitable localities.

I once met a man carrying on a perch an albino Shrike, which was, I have no doubt, an individual of this species. It was pure white with pink eyes and legs. The bird was quite tame, and, according to its owner, had come from Shanghai.

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* Continued from p. 450.

40. Lanius bucephalus T. & S.

Styan, Ibis, 1891, p. 347.

A common bird in winter from October to the end of February. Styan mentions the capture of an example in March.

41. Lanius lucionensis Linn.

Styan, Ibis, 1891, p. 348.

This species passes in May and from the end of August to the beginning of October. A few pairs breed in the vicinity of Chinkiang. On July 4, 1902, I bought three nestlings from a bird-catcher. Their plumage was as follows:—Above light greyish chestnut, barred with dark brown; head brownish grey, also barred with dark brown, and having the feathers tipped with buff; lores and ear-coverts blackish, a whitish yellow stripe over the eye (continued in two of the birds round the forehead); under parts pale buff, with brownish lunules and bars on the sides of the breast. Wings, larger wing-coverts, and tail brown, with subterminal black and terminal buff edgings to the feathers.

The gradual change of plumage was as follows:—

July 11.—The back was becoming darker, the barring on the head and the eyebrow were more distinctly marked.

July 30.—The birds appeared fully grown and the upper back had turned brown.

Aug. 20.—The head and back were becoming plain liver-brown through the growth of new feathers. The new plain brown feathers then covered the back of one bird and part of its head.

Sept. 13.—All the three birds were in complete immature dress with a well-marked whitish eyebrow, which in two of them passed round the forehead.

One of these birds died while in immature dress; the remaining two, a male and a female, assumed the adult plumage in the following spring and early summer. The change began at the beginning of March, when the worn feathers on the forehead were being replaced by new grey feathers.

I reared these Shrikes on locusts, which were that year only too abundant. They also ate a little chopped raw beef and bread and milk. They were extremely voracious; in a wild state this species must consume an immense number of insects. I occasionally saw my birds with a grasshopper in their bill as well as one in each foot. They began to use their feet for holding their food about July 15. The male began during the first winter to sing very sweetly. The song was low and was often uttered at night by lamplight.

The male died during the second winter; the female was brought to Europe, and is now living in the Gardens of the Zoological Society of London.

Two nests, each containing three slightly incubated eggs, were brought to me on June 6, with the female in one case. One of these nests is a large and massive cup with thick sides and strong hard base. It is made of roots, leaf- and grass-stems, bents, a good deal of grass-down with a feather or two, a bit of native cotton-cloth, and a piece of dirty cotton-wool —evidently the stuffing of some native wadded garment— worked in with the roots, &c. The lining is of fine roots and fine grass-stems. Outwardly it measures: diameter $5\frac{1}{4} \times 6\frac{1}{4}$ in., depth 3 in. The inner measurements are: diameter $3 \times 3\frac{1}{4}$ in., depth about 2 in. The other nest is not so large; it is made of moss, roots, grass-stems, grasses, and a little grass-down, wool, and animal hair. The lining is of fine roots and grass-stems with a feather or two. The outer measurements are: diameter $4\frac{1}{2} \times 5\frac{1}{2}$ in., depth 3 in. Inside, the diameter is $2\frac{3}{4} \times 3$ in. and the depth 2 in. The eggs are pale yellow-green stone-colour, with a broad ring round the larger end of confluent and detached spots and specks of pale violet-grey, over which are spots of very pale brownish; the rest of the shell is sparsely spotted and speckled with the latter colour and with a very few grey markings. They are very smooth, have a slight gloss, and are ovate in shape. They average $0{\cdot}91 \times 0{\cdot}66''$; the largest is $0{\cdot}92 \times 0{\cdot}66''$, and the smallest $0{\cdot}89 \times 0{\cdot}66''$.

42. Lanius superciliosus Latham.
Styan, Ibis, 1891, p. 347.

A handsome adult female was shot on May 19.

43. LANIUS TIGRINUS Drapiez.
Styan, Ibis, 1891, p. 348.

These birds appear in May, during which month they are not uncommon. Some breed in the district, but I was unable to procure any nests. A pair of live adults caught with bird-lime was brought to me on May 29. I kept them for some time, but, as they continued wild, I soon liberated them.

44. PERICROCOTUS CINEREUS Lafr.
Styan, Ibis, 1891, p. 347.

This species is extremely abundant in woods on the hills during May. One individual was shot on the plain on April 18. I saw another on October 18 on the plain on the north bank of the river, but did not meet with any others during the autumn. None remain to breed.

45. PERICROCOTUS CANTONENSIS Swinhoe.
Styan, Ibis, 1894, p. 336; La Touche & Rickett, Ibis, 1905, p. 37.

A single pair was shot on May 28 in a wood near Chinkiang. The state of the testes and ovary shewed that the birds were about to breed. This is probably the northern limit of this Minivet in East China. I never met with it again during my stay at Chinkiang.

46. CAMPOPHAGA MELANOPTERA (Rüppell).
Styan, Ibis, 1891, p. 347; La Touche & Rickett, Ibis, 1905, p. 38.

One specimen was shot by the collectors on May 15. I saw no others at Chinkiang.

47. ORIOLUS DIFFUSUS Sharpe.
Styan, Ibis, 1891, p. 346; La Touche & Rickett, Ibis, 1905, p. 38.

This Oriole is extremely common during summer, and nests on tall trees in the vicinity of hamlets and houses on the plains. It also breeds on the wooded hills. The collectors told me that while they were at the hills they saw on May 11 a party of about thirty of these birds which had probably just arrived.

I have obtained eggs from June 6 to July 16. The men whom I employed in searching for nests told me that there were two broods in the season. A series of twenty-seven eggs taken at Chinkiang shews that the ground-colour varies from pale to deep blush pink. The shape varies from broad ovate to long pointed ovate, one specimen is of a somewhat cylindrical oval. They average 1·18 × 0·85″; the longest is 1·30 × 0·85″, the shortest are 1·10 × 0·85″. The broadest diameter is 0·91″ and the narrowest 0·80″.

The nests have been described by Rickett and myself. A great many of those taken at Chinkiang were chiefly made of reed-flower tops and grass-down. Although most of those which I saw there were built on tall trees at a considerable height, at least three were placed on small trees and were some fifteen feet or less from the ground.

48. Acridotheres cristatellus (L.).

Styan, Ibis, 1891, p. 357; La Touche & Rickett, Ibis, 1905, p. 40.

Resident and abundant. I have seen cages full of young birds hawked about the Concession in June and later in the summer. There are probably two broods in the season. Four eggs taken from a hole in the rotten branch of a medium-sized willow on May 29 were hard-set. The nest-hole was lined with chicken's feathers, straws, &c.

49. Spodiopsar cineraceus (Temm.).

Styan, Ibis, 1891, p. 357.

A very abundant winter bird from September onwards.

50. Sturnia sturnina (Pall.).

Styan, Ibis, 1891, p. 357.

This species passes Chinkiang in May and September. I kept a female caught with bird-lime alive for nearly a year. It became quite tame at once, but was sickly and never throve.

51. Alseonax latirostris (Raffl.).

Styan, Ibis, 1891, p. 348.

Abundant on passage, appearing about mid-April and remaining throughout May. It returns in September.

52. Hemichelidon sibirica (Gm.).
Styan, Ibis, 1891, p. 349.

This species is not at all uncommon in May, and passes again in October. I have a young bird, shot on October 6, which still retains a number of spotted feathers of the nestling plumage.

53. Muscicapa griseisticta (Swinhoe).
Styan, Ibis, 1891, p. 349.

Not particularly common, but found in woods and groves on the hills in May.

54. Muscicapa albicilla Pall.
Styan, Ibis, 1891, p. 349.

One example was shot on October 3. I never met with another.

55. Poliomyias luteola (Pall.).
Styan, Ibis, 1891, p. 349.

Common enough on the hills in May and again in October.

56. Cyanoptila cyanomelæna (Temm.).
Styan, Ibis, 1891, p. 349.

Appears to be rather uncommon about Chinkiang. A male and a female shot on April 22 and May 9 and one or two individuals seen on September 27 are all that I have noticed.

57. Xanthopygia narcissina (Temm.).
Styan, Ibis, 1891, p. 349.

Styan mentions an example shot at Chinkiang. I have never seen the bird there.

58. Xanthopygia tricolor Blyth.
Styan, Ibis, 1891, p. 349.

The Tricolor Flycatcher arrives at Chinkiang about April 20, and is common during the summer. The natives catch it with bird-lime. I have a specimen thus obtained which has the eyebrow tinged with yellow.

This Flycatcher breeds on the plains, nesting in holes of trees on the banks of ponds or in their immediate vicinity.

I saw or heard many pairs in the groves of tall trees which line the long ponds at the back of the villages and hamlets in the low-lying country. The short but harmonious and powerful song of the male is to be heard in these localities throughout the early summer. The nests are, however, very difficult to find, and I secured only one with eggs. On June 23, 1893, a nest-hole was discovered near the top of a dead branch of a willow on the bank of a pond. It contained one young bird just about to fly; the others had already done so, and were with their parents on a neighbouring tree. This young bird escaping from the hand of its captor fluttered down and fell into the pond, and to our astonishment struggled straight back towards the bank, where it was rescued and replaced in the nest. The next nest-hole was discovered on May 29 of the following year. It was in a live branch of a Pride of India tree (*Melia azaderach*), also near a pond. We saw the female enter the hole with nesting-material, but on returning a few days later to take the eggs we found it empty save for one or two straws. The site, just by a public path, was too much exposed. On June 5 following another nest was found. It was, like the first, near the top of a partly-decayed branch of a willow growing on the side of a pond and was built in an old Woodpecker's hole. It contained five eggs, somewhat incubated. These eggs are of a pinkish cream-colour speckled with pale orange-red or pale burnt-sienna over reddish-violet spots. One of them has besides a few minute black specks on the larger end. The markings are chiefly concentrated about the larger end of the eggs. One egg has a ring of confluent specks round the larger end, another having a lighter, and two others irregular rings. They measure 0·67 × 0·51″, 0·68 × 0·52″, 0·69 × 0·53″, 0·70 × 0·51″, and 0·70 × 0·53″. The nest was a very fragile cup-shaped fabric of bamboo-leaves and fine roots, lined with a little hair and fragments of fine roots and grass-stems. The boy who climbed up the tree unfortunately partly destroyed the nest in taking it out. The inner diameter is about 2½ in.

This Flycatcher appears to be very pugnacious, and attacks other birds when they happen to come anywhere near the nest-hole. I once saw a male furiously attack and drive off a Spark-headed Woodpecker that was climbing about some trees near its nursery; and after we had taken the nest and eggs described above, the female, on seeing a Lesser Tit fly to the branch where the hole was, darted out from a neighbouring tree and drove it away.

59. TERPSIPHONE INCII (Gould).

Styan, Ibis, 1891, p. 350; La Touche & Rickett, Ibis, 1905, p. 40.

Ince's Paradise Flycatcher is very common in summer, arriving about the first week in May. It breeds in the tree- and bamboo-copses on the plain and also in the woods on the hills. The nests that I saw were placed at heights varying from four to twenty feet from the ground. A very pretty specimen found, empty as yet, on May 29, was made of bright green moss and plentifully spangled outside with the downy feathers of wild Doves. The eggs are laid in June. Two clutches of four eggs each and an incomplete clutch of two, taken on June 10, 21, and 18 respectively, average 0·84 × 0·61″; the largest of these is 0·87 × 0·64″, the smallest 0·82 × 0·59″. The shape of eight of these eggs is narrow ovate, the other two are rather broad ovate.

White males are very common at Chinkiang, while at Foochow they are comparatively scarce.

60. PRATINCOLA MAURA (Pall.).

Styan, Ibis, 1891, p. 337.

A few pass in April and early in October. Those seen in spring were all in full breeding-dress.

61. RUTICILLA AURORFA (Pall.).

Styan, Ibis, 1891, p. 338.

A very common winter bird.

62. CALLIOPE CAMSKATKENSIS (Gm.).

Erithacus calliope (Pall.); Styan, Ibis, 1891, p. 338.

I shot a young male in some bushes by a pond on November 3, and the collectors shot a female on May 21 following. On October 16, a couple of years after, while looking for Pheasants in some bean-fields at the foot of the grass-covered hills near Chinkiang, I came across a number of these birds. They were among the beans, and when flushed generally flew into the thick cover at the base of the hills. I secured on that occasion a male and a female.

63. Larvivora cyanus (Pall.).

Erithacus cyanus (Pall.) ; Styan, Ibis, 1891, p. 338.

This bird seems rare about Chinkiang. The only specimen which I have seen (a male in partly immature dress) was shot by the collectors on the hills on May 19. They saw another on May 15.

64. Tarsiger cyanurus (Pall.).

Styan, Ibis, 1891, p. 349.

Very few, if any, of these birds winter about Chinkiang. They pass in March and April. Once, on April 13, I saw on the hills a great number which had evidently just arrived.

65. Merula mandarina (Bp.).

Styan, Ibis, 1891, p. 332; La Touche & Rickett, Ibis, 1905, p. 42.

The Chinese Blackbird is very common on the plain, but appears to be absent from the low hills and loess country at the back of Chinkiang. The natives rear it in cages as in South China. It breeds commonly on the plain from April to July. Fresh eggs were brought to me on April 20 and some nearly fresh on July 11, so that there are two or three broods during the year. A nest taken on June 18 contained six nearly fresh eggs. The nests, as in Fohkien, are built on the boughs of trees, generally at a good height from the ground.

66. Merula pallida (Gm.).

Styan, Ibis, 1891, p. 332.

A common winter bird, remaining as late as the end of April. As a rule it is found in thick cover and in gardens, orchards, &c., but on one occasion I shot an individual perched on a bare tree in the middle of a field.

67. Merula obscura (Gm.).

Styan, Ibis, 1891, p. 332.

Passes Chinkiang in May. It is by no means common.

68. Merula hortulorum (Sclater).

Styan, Ibis, 1891, p. 332.

Passes in April and May. It appeared to be very common in 1902 and nine examples were shot from the 16th to the 27th of April. I also obtained one on May 5. Most of these were adult males, but one or two were young males with spotted breasts and two or three were females. They frequented woods on the hills and thickets and copses on the plain.

69. Merula fuscata (Pall.).

Styan, Ibis, 1891, p. 333.

A common winter bird. It becomes very abundant in early spring and remains until the latter half of April.

70. Merula naumanni (Temm.).

Styan, Ibis, 1891, p. 332.

Also a common winter bird, whose numbers greatly increase in early spring. The collectors, who shot one on April 14, told me that on April 22 they saw two flocks of Thrushes, either of this species or *M. fuscata,* going north, each flock being composed of about two hundred individuals.

71. Geocichla sibirica (Pall.).

Styan, Ibis, 1891, p. 333.

I met with small parties of this Thrush on September 27 and October 16, and shot two females on the first-mentioned date. On both occasions the birds were in woods on the hills and were feeding on the ground, whence they flew into trees when frightened.

72. Oreocincla varia (Pall.).

Styan, Ibis, 1891, p. 333.

The collectors saw one example on May 15 amongst woods on the hills. I believe that I saw another on April 19, a year or two after, in the same woods.

73. Monticola solitaria (P. L. S. Müller).

Styan, Ibis, 1891, p. 333.

A male was sent to me from Kaoyu Lake, on the north bank of the Yangtze, by Father Perrin, S.J. I did not shoot any specimens at Chinkiang, but have seen near the summit of one of the higher hills of the locality, on May 12 and 25, Rock-Thrushes which were most likely of this species. They probably bred there. I saw one or two on the same hill on September 16, and from the 8th to the 14th of that month some frequented the cliff behind our house and a neighbour's roof. These were evidently migrating.

74. Monticola gularis (Swinhoe).

Styan, Ibis, 1894, p. 333.

On September 27, 1901, I shot a female in a wood a few miles from Chinkiang. The next year, on October 5, I shot a male in a pine-wood not far from the same place.

75. Uroloncha acuticauda (Hodgson).

Styan, Ibis, 1891, p. 356; La Touche & Rickett, Ibis, 1905, p. 42.

A scarce resident. I have seen it in the Custom House garden, where a nest was built in 1900 in a small tree close by the entrance-door. I have met with the bird only once in the country; the collectors also noticed it once.

76. Coccothraustes japonicus T. & S.

Styan, Ibis, 1891, p. 352.

On the 27th of April, 1900, I met with a party of Hawfinches in a pine-wood a couple of miles from Chinkiang. They were very shy, and concealed themselves carefully in the thickest parts of the foliage, darting out as I approached to hide in some other tree fifty yards or so further on, where they remained concealed and absolutely quiet until again disturbed. As I had only a small collecting-gun and it was getting dusk I secured but one example. I have never seen any of the birds since.

77. Eophona melanura (Gm.).

Styan, Ibis, 1891, p. 353.

The Black-tailed Hawfinch is a common resident species.

It breeds in May and June, generally building in high or, at least, medium-sized trees, and, as a rule, on a large horizontal bough at some distance from the trunk. An empty nest seen on June 18 was placed in the midst of a creeper in which the branch was partly wrapped up. This Hawfinch seems fond of the company of other birds, often building on trees where Blackbirds and Blue-winged Magpies have their nests.

I obtained at Chinkiang four nests with eggs. One, containing two stale eggs, was brought to me on June 14, 1903. On May 29 of the following year I took two nests, one containing four eggs nearly hard-set and another three that were fresh, while on June 5 following I found a fourth nest, which, as it contained but one egg, I left alone, sending a man to take it five days later. The two nests taken on May 29 are fairly deep cups, built in two parts. The inner part is a strong fabric of bamboo-leaves and coarse grass-blades firmly welded together with mud, and perhaps also with cobwebs; wrapping up the walls of this inner structure is a casing of tendrils and fine twigs or coarse grass-stems, the base of the inner cup having rested on the branch itself. The lining is of slender roots with a few fine bamboo-leaves, and the edge of the nest is rather well finished and rounded off with the material of both the inner and the outer portions. Measurements: inner depth, $1\frac{3}{4}$ and 2 in.; inner diameter, a little under and a little over 3 in.; outer depth, about 3 in.; outer diameter (irregular), 5 in. and above. The nest brought on June 14, 1903, resembles the others, but the outer casing of twigs is missing (lost in taking, no doubt), while a certain amount of wool and a little moss enter into its composition. Its inner measurements are: depth, $1\frac{3}{4}$ in.; diameter, $3 \times 3\frac{1}{4}$ in. The fourth nest, brought to me on June 10, 1904 (said to be the one found by me on the 5th and subsequently deserted), is of a very different appearance. The materials are much the same as those of the other nests, but the bamboo-leaves composing the inner cup are not welded together and are quite loose, the outer casing of twigs is under as well as round this inner cup, which is shallow. It seems to have been knocked about.

The eggs taken on June 14, 1903, and the incubated clutch of four taken on May 29, 1904, are of a broad ovate shape, and are coloured light olive-green with roundish and drop-like surface-spots and twisted broad lines and a few hair-lines of very dark brown (the lines beginning or ending in the spots) and shell-spots and lines of very dark dull violet-grey with fainter lines of the same. These markings are distributed pretty well all over the shell. Measurements vary from 0·87 × 0·71″ to 0·94 × 0·74″ (average 0·91 × 0·73″). The three fresh eggs taken on May 29 are of a long ovate shape. The ground-colour is a light greyish green; the spots and lines are very dark and almost confined to the broad extremity. Measurements: 0·97 × 0·68″, 0·97 × 0·67″, and 0·93 × 0·69″. The single egg brought to me on June 10 is very large: 1·01 × 0·74″. It is of a long ovate shape and resembles those last described. The marks are chiefly confined to the broader half of the shell.

78. Eophona migratoria Hartert.

Eophona melanura migratoria Hartert, Vög. pal. Fauna, 1903, p. 59.

This small form of *E. melanura* passes Chinkiang in May. A male and two females were shot by the collectors on May 3 and 5, 1902. It is this bird which is found in winter in Fohkien (see 'Ibis,' 1892, p. 427). It is noticeably smaller than typical *E. melanura.*

So far as I could make out from the series in the British Museum collection, this Hawfinch is found in Yunnan, Kwangtung, and Kiangsi, as well as in Fohkien. The specimens in the B.M. collection from East Siberia appear to me to be very much greyer and paler than any of the Chinese examples which I have seen, with the exception of one in my series from Fohkien, which is also a pale bird, intermediate in tint between Siberian and Chinese examples.

79. Eophona magnirostris Hartert.

Eophona personata (T. & S.); La Touche, Ibis, 1900, p. 36.

E. personata magnirostris Hartert, Vög. pal. Fauna, i. p. 58.

A Masked Hawfinch seen by me in the possession of a native at Chinkiang had, according to its owner, been taken in the locality.

80. Chloris sinica (L.).

Styan, Ibis, 1891, p. 353; La Touche & Rickett, Ibis, 1905, p. 44.

A common resident. Specimens obtained at Chinkiang appear to be more brilliantly coloured than Fohkien birds.

The Chinese Greenfinch breeds at Chinkiang among the pine-woods on the hills. Two nests which I found were placed on small pines right in the centre of the foliage. One of these, taken on May 12, 1901, contained four much-incubated eggs, which are pure white, one having a few pale yellowish brown specks and the others a very few faint yellowish grey specks. One measures 0·70 × 0·53″ and the others 0·68 × 0·50″. On the same day a native gave me a nest with one egg coloured as described by Rickett and myself in our paper on Fohkien eggs and nests. It measures 0·73 × 0·51″. Two years afterwards, on May 11, I found the second nest, which also contained white eggs. As there were only two of them, I left it, and, two days later, sent a man to take it. He brought me back the nest with three eggs. One of these, of a long narrow ovate shape and measuring 0·75 × 0·50″, is pure white with a few very faint yellowish specks on the larger end, another is ovate (0·70 × 0·52″) and has a few similar markings on a white ground, and the third, also ovate (0·73 × 0·55″), is lightly speckled on the larger end with rather pale burnt-sienna. The three nests obtained are quite similar in make and size to those from Foochow, and, as I myself saw the parent birds on the nests containing the white eggs, there is no fear of any mistake having been made. The eggs of the Chinese Greenfinch are therefore of two types: *a.* Pale green, speckled with black and red; *b.* White, speckled with pale reddish or pale yellowish brown. Both styles occur at Chinkiang, while at Foochow the first type only has been obtained as yet.

81. Chrysomitris spinus (L.).

Styan, Ibis, 1891, p. 353.

The Siskin is abundant in April and during the first part of May. I have not noticed it at any other time. The natives catch it with bird-lime and keep it as a cage-bird.

82. Fringilla montifringilla L.

Styan, Ibis, 1891, p. 352.

Small parties may be seen during winter in the open country and in the reed-beds. During March and April large flocks frequent the woods and open country.

83. Passer montanus Briss.

Styan, Ibis, 1891, p. 352; La Touche & Rickett, Ibis, 1905, p. 44.

Abundant, as elsewhere in China, in towns and villages.

84. Ægiothus linarius (L.).

On November 23 a bird-catcher brought me a live Redpoll, which I took to be of this species. It had been caught with bird-lime. I kept it in a cage for some time, but unfortunately it escaped. The bill of this bird was yellow, with brown culmen; the legs were very dark, almost black.

85. Emberiza spodocephala Pall.

Styan, Ibis, 1891, p. 353.

A very common winter bird, arriving early in October and remaining until late in May.

86. Emberiza melanops Blyth.

Styan, Ibis, 1891, p. 353.

A fine male was shot by the collectors on April 26. It is the only individual of this species which I have seen at Chinkiang; I do not think that this bird breeds in the vicinity.

87. Emberiza fucata Pall.

Styan, Ibis, 1891, p. 354.

This Bunting is a very common resident at Chinkiang, frequenting grass-fields in the low country and grass- or brushwood-covered hills. The nests are extremely hard to find. The collectors took one on May 28, 1902, shooting the female at it. It was found on the ground on the hills in a tussock of grass. This nest was a somewhat fragile cup, made of grass-stems, grass-blades, and a few small roots and twigs, with a lining of very fine grass-stems, fine roots, and hair. The outer measurements were: depth about 2¾ in., diameter 4 × 4½ in.; the inner measurements. depth of cup between 1¾ and 2 in., diameter 2½ in. The eggs, five in number, were fresh. The colour is greyish white, very thickly stippled and faintly streaked with light brown. Two of the eggs have besides an underlying stippling of grey. The shape varies from oval, with both ends pointed, to broad ovate. They measure: 0·76 × 0·60″ (two eggs), 0·77 × 0·59″, 0·77 × 0·61″, and 0·80 × 0·61″.

Five other nests with eggs, which I can only refer to this Bunting, were procured from natives on May 12, June 16, June 28, July 2, and August 17. These nests had apparently all been found on the ground among grass on the hills. The nest and eggs obtained on May 12 are very similar to those taken by our men. The inner measurements of the nest are the same, the outer measurements being rather smaller. The eggs are greyer in appearance; they are marked, but not so thickly, with streaks and a stippling of greyish brown over underlying grey stipples; they are also smaller on average (0·75 × 0·58″ to 0·76 × 0·60″). The clutch taken on July 2 contained five slightly incubated eggs, resembling these two clutches, but larger (0·77 × 0·61″ to 0·80 × 0·65″) and more lightly and sparsely marked. The man who took them caught a full-fledged bird of the year, to shew me to what species they belonged. Two clutches of four eggs each, slightly incubated, taken on the 16th and 28th of June, are very different, being blotched, spotted, and speckled with brown (in one clutch bright brown) over underlying violet-grey spots, chiefly at the broad end. In most of these eight eggs some of the underlying marks are streaky, approaching the style of those of the finely marked clutches. The nests containing these have a final lining of hair from cows' tails over the fine root-lining. Otherwise, in measurements, build, and materials, they are much the same as the other. The fifth clutch, brought to me on August 17, contained four much incubated eggs intermediate in markings between the finely speckled and the blotched sets. They are thickly spotted, mottled, and stippled with brown over the same violet-grey underlying marks. They measure from 0·78 × 0·64″ to 0·82 × 0·65″.

The boy who sold these eggs to me picked out a specimen of *Emberiza fucata* from a boxful of Buntings as being the kind of bird which laid them. I have therefore little doubt that I am correct in referring these five clutches to *E. fucata*. I utterly failed either to find any nests myself or to induce natives to shew me them *in situ*.

The blotched eggs might be those of *E. melanops*, which, Styan says, breeds on the Yangtze; but this is unlikely, as I procured only one example of that species, as stated above, and never saw another.

88. EMBERIZA RUSTICA Pall.

Styan, Ibis, 1891, p. 354.

A very common winter bird, leaving in March. It is found in woods as well as in open country.

89. EMBERIZA PUSILLA Pall.

Styan, Ibis, 1891, p. 354.

Passes in April and at the beginning of May. It does not winter at Chinkiang, so far as I know.

90. EMBERIZA CIOIDES Temm.

Emberiza castaneiceps Moore; Styan, Ibis, 1891, p. 354.

E. cioides Temm.; La Touche, Ibis, 1900, p. 36; La Touche & Rickett, Ibis, 1905, p. 45.

This Bunting is a very common resident on the hills. It builds in April, and the eggs are laid at the end of April or in the beginning of May. The natives say that there are two broods in a season. The nest is generally built low down in a small pine. One, however, which I took, was placed right at the top of a small pine fifteen feet high. The female sits pretty closely, and on several occasions I have been able to get quite a near view of her upon the eggs. While she is thus occupied, the male usually sings perched on the top branches of a small tree in the immediate neighbourhood.

The materials composing nests taken at Chinkiang are the same as in those from Fohkien. The number of eggs in a clutch is usually four or five, but sometimes only three. I described in 'The Ibis' for 1900 (p. 36), eggs of *E. cioides* from four taken at Kuatun in N.W. Fohkien. The large series taken by me at Chinkiang enables me now to describe them better. Normally the ground-colour is greyish white. The markings consist of hair-lines and scrawls of very dark brown, short or long, twisted if short, or wound if long, in an ever-varying pattern round the larger end of the egg, over similar underlying lines of violet-grey. In many cases there are roundish or drop-shaped spots, which, as a rule, terminate or begin the lines. The markings almost always form a cap or ring, but exceptionally this is not apparent, the surface-markings consisting of spots or angular lines scrawled irregularly over the egg, the apical part of which is, however, almost always free from spots or lines. The ground-colour of these abnormal eggs is suffused with pinkish. Rarely, some clutches have but few marks: one of this kind in my collection shews a few hair-lines and the ground is marbled with underlying grey, while two of the eggs have, besides, a couple of yellowish blotches. These yellow marks appear also in a clutch given by Rickett with the rest of his collections to the British Museum. The shape of the eggs is normally broadly ovate, exceptionally oval. There is great variation in the size. Forty-six eggs range in length from 0·68″ to 0·82″ and in breadth from 0·55″ to 0·64″. The average of forty-one of these is 0·77 × 0·61″. A very small clutch taken by me, and not included in this estimate, averages 0·694 × 0·56″, the largest of these being 0·71 × 0·56″ and the smallest 0·68 × 0·56″.

The female of *Emberiza cioides* appears to have at Chinkiang two styles of plumage. The most common is that given in descriptions of the species; but I have two females, shot on February 27 and April 28, which resemble the adult male in every respect except as regards the vertex, which is streaked with grey, the chest, which has no chestnut band, and the lesser wing-coverts, which are of a duller grey.

91. Emberiza elegans Temm.
Styan, Ibis, 1891, p. 355.

A common winter bird. It leaves about the beginning of April.

92. Emberiza chrysophrys Pall.
Styan, Ibis, 1891, p. 355.

Four examples were obtained by the collectors on April 21 and 29 and May 5. I shot another, in what appears to be the full breeding-plumage, on April 24, a couple of years afterwards.

The birds obtained by our men differ from the example shot by me in having the median line down the centre of the crown starting almost from the forehead, whereas in my bird this begins only from the hinder part of the crown; also in my bird the yellow stripe above the eye starts just above the eye, in the other birds it begins from the bill. The lores of the first four birds have an admixture of yellow, and the cheeks, instead of being pure black, are brownish, with some yellow under the eye.

93. Emberiza tristrami Swinhoe.
Styan, Ibis, 1891, p. 354.

Several specimens, all more or less in full breeding-plumage, were shot by the collectors on May 3 and 5. This Bunting appears to moult in N.W. Fohkien (see 'Ibis,' 1900, p. 36).

94. Emberiza aureola Pall.
Styan, Ibis, 1891, p. 355.

This Bunting arrives in immense numbers at the end of August, many individuals remaining until the end of October. In 1902 they appeared much earlier, as on July 30 of that year I saw an adult male in full breeding-dress and two females or young birds. The same year a friend told me that he had seen, at the beginning of August, flocks of Buntings, which I have no doubt were of this species. On their arrival from the north these birds are in worn summer-plumage. They begin to moult at once, flocks composed of individuals in all stages of the moult being met with throughout September. Towards the middle of that month they seem to have lost their tails, and when on the wing look like small Quail. By the end of September most of them have assumed their winter dress, and from that time they gradually leave. They reappear in May, among scrub on the hills and among the crops in the plain, when they are extremely numerous. The adults are then in full breeding-dress.

On May 8, 1904, while walking out to the hills, I saw, on some large trees near the road, flocks of this species all singing and twittering in concert. This chorus of song was extremely beautiful and impressive. The birds were very wild, and I could not approach within shot; but, as they flew off, I recognised them as being *E. aureola.*

95. EMBERIZA RUTILA Pall.

Styan, Ibis, 1891, p. 355.

Passes in May and October. On May 5, 1901, I saw great numbers on the hills. I have a young bird, in moult, shot on October 6.

96. EMBERIZA PASSERINA Pall.

Styan, Ibis, 1891, p. 355.

Very abundant in winter among the reeds.

97. EMBERIZA YESSOENSIS Swinhoe.

Styan, Ibis, 1891, p. 355.

I shot a single female example of this Bunting on November 1, on the low brushwood-covered hills a few miles from Chinkiang. I saw no other specimen during my stay at Chinkiang, but no doubt I overlooked the species while shooting in the reed-beds.

98. EMBERIZA PYRRHULINA Swinhoe.

? *Emberiza pyrrhuloides* Pall.; Styan, Ibis, 1894, p. 334.

I shot a female of this Japanese species on March 9. It was perched on a thin willow-bush overhanging a pond, and let me pass quite close to it without moving. I have never seen another example at Chinkiang. On comparing my specimen with the Reed-Buntings in the British Museum, I found that it agreed exactly with the series of *E. pyrrhulina* from Japan. The birds in the British Museum Collection labelled *E. pyrrhuloides* belong to a very large species which has a range extending from Astrachan to Yarkand. I therefore presume that Styan by *E. pyrrhuloides* Pall. means the smaller Japanese form. The birds which he mentions as having been obtained by me at Newchwang in South Manchuria were, so far as I can remember, identical with the Japanese species.

99. PLECTROPHANES LAPPONICUS (L.).

Styan, Ibis, 1891, p. 356.

On November 28 I bought three specimens of the Lapland Bunting from some men who had them among bunches of Larks, which they were hawking about the streets.

100. COTILE RIPARIA (L.).

Styan, Ibis, 1891, p. 351; La Touche & Rickett, Ibis, 1905, p. 45.

Seen in May, July, and September. On September 27 I saw a great many examples flying along with *H. nipalensis* and resting on the telegraph-wires.

101. HIRUNDO GUTTURALIS Scop.

Styan, Ibis, 1891, p. 351.

The Eastern Chimney-Swallows are abundant in summer. They arrive towards the 20th of March and leave in October. They nest in native houses both in the town and the country, and also in the verandahs of foreign houses and under the eaves of godowns on the British Concession. The eggs are laid in May. Eleven eggs average 0·72 × 0·53″; the largest is 0·77 × 0·54″, and the smallest 0·69 × 0·53″. The colour is white, speckled, spotted, and sometimes streaked with dark reddish brown and darkish purple over pale purple underlying spots. One abnormal egg has no apparent underlying spots, and the surface-marks consist of very pale brown spots of irregular shape.

102. Hirundo nipalensis Hodgs.

Hirundo alpestris Pall.; Styan, Ibis, 1891, p. 351.

The Striped Swallows which summer at Chinkiang are not distinguishable from specimens shot at Swatow, Amoy, and Foochow. They arrive about the middle of April, and are abundant in the country all through the summer and also during September and October, when large flights may be seen hawking over the fields or resting on the trees and telegraph-wires. I have not noticed any after the first week in November.

These Swallows keep to the country, breeding in certain villages near the hills on the north bank of the river. I have never observed them about the mud-and-bamboo thatched huts on the plain. They commence building towards the end of April, and lay in May and June. Nests seen by me in the native houses of a village on May 10 were not retort-shaped, but were closed structures with the entrance-hole in front and about 1½ in. in diameter. They looked like bowls with the base knocked out. It may be that they were not finished. Still one of them contained eggs, a specimen of which, shown to me by the owner of the house, was of a narrow ovate shape and pure white. I did not get any eggs that season. The following year one of my collectors brought me a number of clutches on May 31, June 2, 12, and 28. Those brought on the last date were much incubated, and had probably been taken from a deserted nest; some of the others were fresh or nearly fresh, while one or two were much incubated. The eggs are all pure white, like that seen by me as stated above. The full clutch, as a rule, consists of four eggs, but one of those brought to me contained five, and another had only three which were slightly incubated. The most usual shape seems to be a narrow ovate inclining to oval, but I have some specimens which are cylindrical oval and some ovate with much pointed apex. Thirty-one eggs average 0·82 × 0·56″; the longest measures

0·86 × 0·56″, and the shortest 0·77 × 0·54″. In diameter they range from 0·52″ to 0·60″.

103. AMPELIS JAPONICUS (Siebold).

Styan, Ibis, 1891, p. 351.

This Waxwing passes Chinkiang on migration in May, when I procured several examples from the bird-catchers, who take them with bird-lime. I kept one of these alive for several months. I have not seen the bird at any other time.

104. MOTACILLA LEUCOPSIS Gould.

Styan, Ibis, 1891, p. 342; La Touche, Ibis, 1899, p. 412; La Touche & Rickett, Ibis, 1905, p. 46.

Abundant in March. It appears again in September.

105. MOTACILLA OCULARIS Swinhoe.

Styan, Ibis, 1891, p. 343.

Abundant in spring. One year, on March 16, I saw a great number, which had evidently just arrived. Many were perched on trees at the edge of a field. The birds are also very common in October, and a few are to be found during winter.

106. MOTACILLA LUGENS Kittlitz.

Styan, Ibis, 1891, p. 343.

I have noticed a fair number of these Wagtails on marshy fields, chiefly in spring.

107. MOTACILLA MELANOPE Pall.

Styan, Ibis, 1891, p. 343.

Common in spring and autumn. Specimens shot in April and May were all in full breeding-dress.

108. MOTACILLA BOREALIS Sund.

Styan, Ibis, 1891, p. 343.

I shot one example in breeding-dress on April 20. I did not meet with any large flocks of Wagtails of the *Budytes* group at Chinkiang. Three individuals seen in May perched on a tree by a small marsh and a few noticed in fields at the end of September and in October are, besides the above-mentioned bird, all that I have observed. No doubt *M. flava*, *M. borealis*, and possibly *M. taivana* will all be found to pass Chinkiang every year, but they are certainly much less common there than on other parts of the Lower Yangtze.

109. LIMONIDROMUS INDICUS (Gm.).

Styan, Ibis, 1891, p. 344.

A common bird in woods on the hills at the end of April and during May. I have also shot it in the open.

110. ANTHUS MACULATUS (Hodgson).

Styan, Ibis, 1891, p. 344.

A common winter bird. Very abundant in spring, when it is found both in faded and new plumage. The collectors reported having seen great numbers on April 22, which had no doubt just arrived.

111. ANTHUS JAPONICUS T. & S.

Styan, Ibis, 1891, p. 344.

Abundant in winter. On March 22 I obtained a specimen which was beginning to moult, and from the 14th of April to about the 20th birds in full breeding-dress were shot in the wheat-fields. After the last-mentioned date they became very scarce.

I have never seen *Anthus cervinus* at Chinkiang.

112. ANTHUS BLAKISTONI Swinhoe.

Styan, Ibis, 1891, p. 344.

This Pipit is not at all uncommon in winter. I have sometimes seen it in small parties, but, as a rule, it is a solitary bird, frequenting the banks of creeks and ponds. I have several times seen it perch on trees. The call-note is very different from that of the other Pipits with which I am acquainted. It probably leaves about the end of March and returns in November.

113. ANTHUS RICHARDI Vieill.

Styan, Ibis, 1891, p. 344; La Touche and Rickett, Ibis, 1905, p. 46.

Occurs only on passage and is not common. All the examples seen at Chinkiang were very wild. They pass at the end of April and during May, and again in September and October.

As observed in 'The Ibis' for 1896, p. 494, and 1899, p. 414, *Anthus infuscatus* Blyth is the small dark form of this species which breeds in Fohkien, while *Anthus kiangsinensis* A. David was founded on a young example of *Oreocorys sylvanus* (Hodgson).

114. Alauda arvensis L.

Styan, Ibis, 1891, p. 356.

Common in winter.

115. Alauda cœlivox Swinhoe.

Styan, Ibis, 1891, p. 356.

This Lark is very common in summer and breeds on the hills. It is a favourite cage-bird with the natives, who rear the young from the nest.

I have five eggs. Four were taken on May 12 from a nest, found on the lower ridge of one of the hills, which had been forsaken. These, though much incubated, were cold, and I did not see the parent birds, but there is no doubt as to the identification. Three of the eggs are ovate and one is long ovate. The colour is greyish white very thickly mottled (in one case speckled) with sap-green over underlying violet blotches. In three specimens there is a well-marked ring round the larger end, the fourth having a cap of confluent surface and underlying marks. They measure 0·90 × 0·64″ (two eggs) and 0·88 × 0·64″ (two eggs). My fifth egg was laid by a tame bird. It is broader and more pointed, and measures 0·86 × 0·65″. The colouring is the same, there being a ring of underlying marks and irregular blotches of sap-green scattered over the shell, chiefly at the larger end.

[To be continued.]

XXXVII.—*Notes on the Parrots.* (Part VI.)

By T. SALVADORI, H.M.B.O.U.*

Fam. V. PSITTACIDÆ (Cat. Birds Brit. Mus. xx. p. 137).

Subfam. PIONINÆ (op. cit. p. 267).

CHRYSOTIS Sw.

Dr. Sharpe ('Hand-list,' ii. p. 20) follows the American ornithologists, who prefer using the generic name *Amazona* Less. to that of *Chrysotis* Sw. As stated in the 'Catalogue of Birds,' xx. p. 268, the term *Amazona* was first used by Lesson in 1831 as a subgenus, but before the same author gave to it generic value in 1847 (Descr. Mamm. et Ois. p. 196) Swainson in 1837 had established the genus *Chrysotis*. It appears to me doubtful whether in such a case priority can rightly be attributed to the name *Amazona*, established with generic value ten years later than *Chrysotis*.

CHRYSOTIS GUILDINGI Dutton, Avicult. Mag. (2) ii. pl. to p. 121 (1904); Rothsch. Bull. B. O. C. xvi. p. 15 (1905); Nicoll, t. c. p. 23 (1905).

Amazona guildingi Sharpe, Hand-list, ii. p. 20, n. 1 (1900).

Said to be nearly extinct.

CHRYSOTIS AUGUSTA (Vig.).

Amazona imperialis Richm. Auk, xvi. p. 186 (nom. emend.) (1899); Sharpe, Hand-list, ii. p. 20, n. 2 (1900); Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

It appears to me at least doubtful whether we ought to give up the name of *Chrysotis augusta* (Vig.), there being a *Psittacus augustus* Shaw (1792). The latter name is a synonym of *Anodorhynchus hyacinthinus* (Lath.) (1790), so that Shaw's name can never have come into use; besides, the two birds which have received the specific name *augustus* belong to two different genera.

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* Continued from p. 465.

Chrysotis versicolor (Müll.); Thomson, Avicult. Mag. viii. pl. to p. 275 (1902).

Amazona versicolor Sharpe, Hand-list, ii. p. 20, n. 4 (1900); Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

Chrysotis bouqueti Bechst.; Dutton, Avicult. Mag. vii. pl. i. (1901).

Amazona bouqueti Sharpe, Hand-list, ii. p. 20, n. 5 (1900); Clark, Auk, 1905, p. 344 (extinct); Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

Mr. Clark mentions this species as already extinct.

Chrysotis martinicana (Clark).

Amazona martinicana Clark, Auk, 1905, p. 343; Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

This name has been given provisionally to an extinct Parrot, which Labat (Nov. Voy. ii. p. 214) mentions as resembling that from Dominica (*C. bouqueti*), but having the top of the head slaty with a few spots of red.

Chrysotis guatemalæ Hartl.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 584 (1897).

Chrysotis pulverulenta Lawr. (nec Bodd.), Bull. U. S. Nat. Mus. no. 4, p. 36 (Chimalapa) (1875).

Amazona guatemalæ Sharpe, Hand-list, ii. p. 20, n. 6 (1900).

Chrysotis virenticeps Salvad.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 585 (1897).

Chrysotis guatemalæ var. *virenticeps* Dub. Syn. Av. p. 4 (1899).

Amazona virenticeps Sharpe, Hand-list, ii. p. 20, n. 7 (1900).

Chrysotis inornata Salvad.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 585 (1897); Salvad. & Festa, Boll. Mus. Tor. no. 339, p. 9 (Punta de Sabana, Darien) (1899); no. 368, p. 25 (Rio Santiago and Rio Peripa, E. and W. Ecuador) (1900).

Amazona inornata Sharpe, Hand-list, ii. p. 20, n. 9 (1900);

Berl. & Hartert, Nov. Zool. ix. p. 109 (Orinoco Region) (1902).

Dr. Festa and I have noticed (*l. c.*) that a specimen collected by the former on the Rio Peripa, W. Ecuador, has many yellow feathers amongst the green plumage of the forehead, a feature which, if constant, would entitle the specimens from W. Ecuador to be recognised as belonging to a distinct form.

Chrysotis mercenaria (Tsch.); Hartert, Nov. Zool. v. p. 500 (Paramba) (1898); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 25 (Mendez, E. Ecuador) (1900).

Chrysotis amazonica (Linn.); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 25 (Rio Santiago, E. Ecuador) (1900).

Amazona amazonica Sharpe, Hand-list, ii. p. 20, n. 11 (1900); Berl. & Hartert, Nov. Zool. ix. p. 110 (Orinoco Region) (1902).

Chrysotis xanthopteryx Berl.

Loro cabeza amarilla Azara, Apunt. i. p. 440, n. 28 (1803) (fide Salv. Ibis, 1880, p. 361).

Psittacus amazonicus Burm. (nec Linn.), Reise La Plata-Staaten, ii. p. 443 (1861).

Chrysotis æstiva, part., Sclat. Cat. Am. B. p. 353, n. 2106, specim. *b* (Paraguay, perhaps different) (1861); Scl. & Salv. Nomencl. Av. Neotrop. p. 114, n. 29 (1873); Salv. (nec Linn.) Ibis, 1880, p. 361 (Salta); Berl. Journ. f. Orn. 1887, p. 122 (Paraguay); Sclat. & Huds. Arg. Orn. ii. p. 47 (part.) (1889); Salvad. Cat. B. xx. p. 285–288, specim. *i, k, l* (1890).

Chrysotis amazonica White (nec Linn.), P. Z. S. 1882, p. 621 (Catamarca, Tucuman, Paraguay).

Chrysotis æstiva xanthopterix Berl. Orn. Monatsb. iv. p. 173 (Bolivia, Paraguay, N. Argentina) (1876).

Chrysotis æstiva var. *xanthopteryx* Dub. Syn. Av. p. 5 (1899).

Amazona xanthopteryx Sharpe, Hand-list, ii. p. 20, n. 13 (1900).

"*Ch. æstivæ* (Li.) simillima, differt humeris antice late aureo-flavis, nec rubris, postice solummodo plus minusve rubris, vel flavis rubro maculatis." (*B.*)

Hab. Bolivia, Paraguay, and N. Argentina.

This is the western representative of *C. æstiva.*

—CHRYSOTIS OCHROPTERA (Gm.); Hartert, Ibis, 1893, pp. 301, 328, 329, pl. ix. f. 1 (Venezuela and Aruba I.).

Chrysotis canifrons Lawr. Ibis, 1893, p. 566; Hartert, Ibis, 1894, pp. 102–105.

Chrysotis ochroptera var. *canifrons* Dub. Syn. Av. p. 5 (1899).

Amazona ochroptera Sharpe, Hand-list, ii. p. 21, n. 14 (1900).

Dr. Hartert is of opinion that the description of *C. canifrons* Lawr. Ann. N. York Ac. ii. p. 381 (1883) (Island of Aruba) was taken from a specimen of *C. ochroptera.*

—CHRYSOTIS ROTHSCHILDI Hartert, Bull. B. O. C. i. p. xiii (Bonaire) (1892); id. Ibis, 1893, pp. 123, 328, pl. ix. f. 2; Dub. Syn. Av. p. 5, n. 45 (1899).

Amazona rothschildi Sharpe, Hand-list, ii. p. 21, n. 15 (1900).

"*Chrysotis* similis *C. ochropteræ,* sed rostro minore, marginis cubitalis colore rubro magis extenso, et colore flavo capitis, menti et alarum tectricum minorum minus extenso distinguenda."

Hab. Island of Bonaire.

CHRYSOTIS OCHROCEPHALA (Gm.); Dub. Syn. Av. p. 5, n. 46 (1899).

Amazona ochrocephala Sharpe, Hand-list, ii. p. 21, n. 16 (1900); Berl. & Hart. Nov. Zool. ix. p. 109 (Orinoco Region) (1902).

—CHRYSOTIS PANAMENSIS Cab.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 586 (1897); Salvad. & Festa, Boll. Mus. Tor. no. 339, p. 9 (Panama) (1899).

Chrysotis ochrocephala var. *panamensis* Dub. Syn. Av. p. 5 (1899).

Amazona panamensis Sharpe, Hand-list, ii. p. 21, n. 17 (1900).

Chrysotis auro-palliata (Less.); Underw. Ibis, 1896, p. 445; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 586 (1897); Dub. Syn. Av. p. 5, n. 47 (1899).

Chrysotis schmidti Ihering, Rev. Mus. Paul. iii. p. 321 (1899).

Amazona auripalliata Sharpe, Hand-list, ii. p. 21, n. 18 (1900).

Amazona schmidti Sharpe, Hand-list, ii. p. 21, n. 19 (1900); Ihering, Rev. Mus. Paul. v. p. 321 (1902), vi. p. 347 (1904) (=*auropalliata*); Dub. Syn. Av. p. 1053 (1903).

C. schmidti was described from an imperfect specimen, without tail and without locality, preserved in the Museum of São Paolo. A Colonel Schmidt told Dr. Ihering that the species lived in the Province of São Paolo between Rio Morto and Itapura, but the information has proved to be erroneous, and the bird has been identified with *C. auropalliata*.

Chrysotis levaillanti G. R. Gr.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 587 (1897).

Amazona oratrix Ridgw.; Sharpe, Hand-list, ii. p. 21 n. 20 (1900); Dub. Syn. Av. p. 1053 (1903).

The same reasons which make me doubtful about rejecting the name *C. augusta* make me uncertain about refusing Gray's name *levaillanti* for that of *oratrix* Ridgw. The name *Psittacus levaillanti* Lath. belongs to quite a different genus (*Pœocephalus*), and can never be used, being only a synonym.

Chrysotis tres-mariæ (Nels.).

Chrysotis levaillanti Grayson (nec Gray), Pr. Bost. Soc. N. H. xiv. p. 271 (1871); id. Mem. Bost. Soc. N. H. ii. p. 296 (1874); Salvad. Cat. B. xx. p. 293 (pt.) (1891); Salv. & Godm. Biol. Centr.-Am., Aves, ii. p. 587 (pt.) (1897).

Amazona oratrix, pt., Sharpe, Hand-list, ii. p. 21, n. 20 (1900).

Amazona oratrix tresmariæ Nels. Auk, xvii. p. 256 (1900).

Amazona oratrix var. *tres mariæ* Dub. Syn. Av. p. 1053 (1903).

This form has been separated from the true *C. levaillanti* on account of the rather light grass-green back, more bluish-green under parts, and much greater extension of yellow on the neck, especially on the under side. In common with Salvin and Godman, I have examined Tres Marias specimens, and have failed to notice any important character to distinguish them from those from Mexico (*C. levaillanti*).

Chrysotis viridigena Cass.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 590 (1897).

Amazona viridigena Sharpe, Hand-list, ii. p. 21, n. 24 (1900).

Chrysotis finschi Sclat.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 589 (1897).

Amazona finschi Jouy, Pr. U. S. Nat. Mus. xvi. p. 786 (1894); Sharpe, Hand-list, ii. p. 21, n. 25 (1900); Miller, Bull. Am. Mus. N. H. xxi. p. 348 (S. Sinaloa) (1905).

Chrysotis salvini Salvad.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 592 (1897).

Amazona diademata Zeled. (nec Spix) Ann. Mus. Nac. Costa Rica, 1887, p. 124.

Amazona salvini Richmond, Pr. U. S. Nat. Mus. xvi. p. 519 (1894); Sharpe, Hand-list, ii. p. 21, n. 27 (1900).

Chrysotis lilacina (Less.).

Androglossa hecki, Richm. Journ. f. Orn. 1891, tab. i. f. 2 (published March, 1892).

Chrysotis hecki Salvad. Ibis, 1892, pp. 467, 468 (= *C. lilacina*).

Chrysotis autumnalis (Linn.); Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 591 (1897).

Amazona autumnalis Sharpe, Hand-list, ii. p. 21, n. 29 (1900).

Chrysotis brasiliensis (Linn.).

Some years ago I received from Dr. Bolau an example of a *Chrysotis* which had probably lived in the Zoological Garden of Amsterdam (?); it is very similar to *C. brasiliensis*, but has small red patches at the base of the outer web on three of the outer secondaries. This feature is wanting in the few specimens of *C. brasiliensis* which I have seen (three in the British Museum and one in that of Turin), and is, I fancy, accidental. Still it is worth mentioning, as, if frequent, it would be necessary to remove this form from the section without the red patches at the base of the outer secondaries, where it has been placed in the key to the species of the genus *Chrysotis* (Cat. B. xx. p. 271).

CHRYSOTIS BODINI Finsch.

Amazona bodini Sharpe, Hand-list, ii. p. 21, n. 31 (1900); Berl. & Hartert, Nov. Zool. ix. p. 109 (Orinoco Region) (1902).

CHRYSOTIS PRETREI (Temm.); Ihering, Ornis, iii. p. 575 (Serra dos Taipes, Mundo novo) (1887).

Amazona pretrei Sharpe, Hand-list, ii. p. 22, n. 36 (1900).

This bird, still rare in collections, is, according to Dr. Ihering, abundant in the Serra dos Taipes from January till March and April.

CHRYSOTIS TUCUMANA Cab.; Sclat. Bull. B. O. C. iii. p. xlv (1894); Salvad. Boll. Mus. Tor. no. 292, p. 27 (Salta) (1897).

Amazona tucumana Sharpe, Hand-list, ii. p. 22, n. 37 (1900).

Dr. Borelli has noticed that this bird, still scarce in collections, is not uncommon in the province of Salta, where it is found in flocks of from fifteen to twenty individuals.

CHRYSOTIS ALBIFRONS (Sparrm.).

Amazona albifrons albifrons Miller, Bull. Am. Mus. N. H. xxi. p. 348 (1905) (S. Sinaloa).

Mr. Nelson and Mr. Miller have restricted the range of the true *C. albifrons* to S.W. Mexico.

CHRYSOTIS SALTUENSIS (Nels.).

Chrysotis albifrons, part., Salvad. Cat. B. xx. p. 311 (specim. from Sonora) (1891).

Amazona albifrons saltuensis Nels. Pr. Biol. Soc. Wash. xiii. p. 26 (N.W. Mexico) (1899); Miller, Bull. Am. Mus. N. H. xxi. p. 348 (S.W. Sonora) (1905).

Mr. Nelson has separated the Sonora bird on account of the bluish tinge on the green feathers, a feature which I had previously noticed in the 'Catalogue of Birds,' but the species still appears to me of very doubtful value.

—CHRYSOTIS NANA (Mill.).

Amazona albifrons nana Miller, Bull. Am. Mus. N. H. xxi. p. 349 (1905) (Colotmul, Yucatan).

Chrysotis albifrons, part., Salvad. Cat. B. xx. p. 311 (1891).

"Similar to *Amazona albifrons albifrons*, but smaller, with the exception of the bill. Wing 155 mm.; tail 75·5; culmen 27·5; depth of bill at base 25·5."

Hab. Yucatan.

Scarcely, in my opinion, a distinct form.

CHRYSOTIS CAYMANENSIS Cory; Nicoll, Bull. B. O. C. xiv. p. 94 (1904).

Amazona caymanensis Sharpe, Hand-list, ii. p. 22, n. 42 (1900); Clark, Auk, 1905, p. 344.

Amazona leucocephalus (sic) *caymanensis* Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

Mr. Nicoll says that this species is very abundant in Grand Cayman, where Dr. Sharpe obtained some living specimens from a native.

CHRYSOTIS BAHAMENSIS Bryant; Bonhote, Avicult. Mag. (2) ii. pl. to p. 239 (1904).

Amazona bahamensis Sharpe, Hand-list, ii. p. 22, n. 43 (1900).

Amazona leucocephala bahamensis Clark, Auk, 1905, p. 344; Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

—CHRYSOTIS VENTRALIS (P. L. S. Müll.).

Amazona ventralis Sharpe, Hand-list, ii. p. 22, n. 40 (1900).

Amazona sallæi (Sclat.); Clark, Auk, 1905, p. 344; Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

I do not understand the reasons for which Messrs. Clark and Rothschild prefer the specific name *sallæi* to the older name of Müller.

GRAYDIDASCALUS Bp.

Pachinus Rchnw. (nec Stål); Oberh. Pr. Ac. Philad. 1899, p. 203.

PIONUS Wagl.

PIONUS MENSTRUUS Hartert, Nov. Zool. v. p. 500 (young, Cachavi) (1898); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 26 (Gualaquiza, Babahoio, Rio Peripa) (1900); Berl. & Hartert, Nov. Zool. ix. p. 110 (Orinoco Region) (1902); Hellm. Nov. Zool. xii. p. 302 (Pará) (1905).

Dr. Festa and I (*l. c.*) have noticed that three specimens from Western Ecuador differ from one from Gualaquiza in having the red gular patch much broader, and answer to *Pionus rubrigularis* Cab. (Journ. f. Orn. 1881, p. 222).

PIONUS MAXIMILIANI (Kuhl).

Pionus lacerus Heine; Sclat. Bull. B. O. C. iii. p. xlv (1894); Ibis, 1894, p. 546; Salvad. Boll. Mus. Tor. no. 208, p. 19 (critical) (1895).

Pionus maximiliani Salvad. l. c.; id. op. cit. no. 378, p. 12 (Mattogrosso) (1901).

I have no longer any doubt as to the identity of *P. lacerus* with *P. maximiliani*.

PIONUS SENILOIDES (Mass. & Souancé); Salvad. & Festa, Boll. Mus. Tor. no. 368, p. 26 (Pun, E. Ecuador) (1900).

PIONUS SENILIS Spix; Richm. Pr. U. S. Nat. Mus. xvi. p. 519 (Nicaragua) (1893); Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 595 (1897).

PIONUS CHALCOPTERUS (Fras.); Hartert, Nov. Zool. v. p. 500 (Paramba) (1898).

PIONUS FUSCUS (P. L. S. Müll.); Berl. & Hartert, Nov. Zool. ix. p. 110 (Orinoco Region) (1902); Hellm. Nov. Zool. xii. p. 302 (Pará) (1905).

DEROPTYUS Wagl.

DEROPTYUS ACCIPITRINUS (Linn.).

Amazona violacea (Gm.); Clark, Auk, 1905, p. 343 (Guadeloupe); Rothsch. Bull. B. O. C. xvi. p. 15 (1905).

Mr. Clark has tried to shew that a Parrot from Guadeloupe, mentioned and insufficiently described by old authors (Dutertre, Hist. Gén. des Isles des Cristophie, de la Guadeloupe, etc. p. 298, 1654; Labat, Nouv. Voy. ii. p. 214, 1742; Briss. Orn. iv. p. 302, 1760; Buff. Hist. nat. Ois. vi. p. 233, 1779), is different from *Deroptyus accipitrinus*, with which the supposed bird from Guadeloupe has been generally identified. The obscure and contradictory descriptions given by old authors make the identification of the Guadeloupe bird hopeless.

DEROPTYUS FUSCIFRONS Hellmayr.

Psittacus accipitrinus Spix (nec Linn.), Av. Bras. i. p. 44, tab. xxxii. (1824) (Villa Nova).

Pionias accipitrinus Pelz. Orn. Bras. iii. p. 265 (1869) (part., Pará).

Deroptyus accipitrinus, part., Salvad. Cat. B. xx. p. 335 (1891).

Deroptyus accipitrinus fuscifrons Hellm. Nov. Zool. xii. p. 303 (1905).

Similar to *D. accipitrinus* from Cayenne and British Guiana, but "somewhat larger and with the pileum not hoary grey, but brown with hoary streaks and with the lateral tail-feathers without the dull red spots at the bases of the inner webs." (*Salvad. l. c.*)

Hab. The Lower Amazon valley.

In the 'Catalogue of Birds' I duly noticed the differences between the specimens of this bird from Guiana and those from Maranham and Sarayacu, and stated that the latter probably belonged to a distinct form. Mr. Hellmayr, having examined fresh specimens from Pará and Villanova on the Amazon, has confirmed the differences found by me and has given a name to the Brazilian form. He is inclined to believe that the new form is confined to the lower Amazon valley and doubts the exactness of the locality "Sarayacu" in Eastern Ecuador attributed to one specimen in the British Museum. Anyhow, the specimen from Maranham belongs to the Brazilian form.

PIONOPSITTACUS Bp.

PIONOPSITTACUS HÆMATOTIS Sclat. & Salv.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 597 (1897).

PIONOPSITTACUS PULCHER Berl.

Pionopsitta pulchra Berl. Orn. Monatsb. v. p. 175 (Colombia occ.) (1897); Dub. Syn. Av. p. 7, n. 87 (1899).

Pionopsittacus pulcher Sharpe, Hand-list, ii. p. 24, n. 6 (1900).

Mas. et fœm. "Corpore viridi, subtus clariore, pileo olivaceo-brunneo, plumis medio nigricantibus apice plus minusve rubro-brunneo marginatis; capitis lateribus, loris margineque frontali pulchre rosaceo-rubris, illis infra (ad colli latera) flavescentibus et vitta nigra marginatis; pectore collique lateribus rufescenti- vel fulvescenti-olivaceis, plaga cubitali aurantio-rubra; primariis extus cyanescentibus, secundariis tectricibusque alæ anterioribus cyaneis viridi marginatis; rectricibus intus rubris, apice margineque anteriore (nisi in quatuor intermediis) cyanescentibus, rostro albo."

"*Obs. P. hæmatoti* forsan maxime affinis, sed capitis lateribus pulchre rosaceis margineque nigro nec brunneis, loris rosaceis nec albis, corporis lateribus minime rubris etc. etc. primo visu distinguenda.

"Long. tot. 234–230, al. 157–150, caud. 66–60, culm. 22–21, tars. 18–16 mm."

Hab. Circum St. José, Dagua, Colombiæ occid. (*coll. Hopke*).

PIONOPSITTACUS COCCINEICOLLARIS Lawr.; Salv. & Godm. Biol. Centr.-Amer., Aves, ii. p. 598 (1897); Salvad. & Festa, Boll. Mus. Tor. no. 339, p. 9 (Darien) (1899).

Adult females are similar to males, but young birds lack the red patch on the ear-coverts and the red collar below the throat.

GYPOPSITTACUS Bp.

GYPOPSITTACUS VULTURINUS (Kuhl); Berl. & Hart. Nov. Zool. ii. p. 110 (Orinoco Region) (1902).

Gypopsitta vulturina Hellm. Nov. Zool. xii. p. 302 (Pará) (1905).

PIONITES Heine.

My reasons for using the generic name *Caica* Bp. (nec Less.) in preference to *Pionites* have not been accepted by Dr. Sharpe ('Hand-list,' ii. p. 25) nor by Mr. Hellmayr (Nov. Zool. xii. p. 302); and I submit to their verdict, although it appears to me that the reasons for so doing are not quite satisfactory.

PIONITES MELANOCEPHALA Sharpe, Hand-list, ii. p. 25, n. 1 (1900); Berl. & Hart. Nov. Zool. ix. p. 110 (Orinoco Region) (1902).

PIONITES LEUCOGASTER (Kuhl); Sharpe, Hand-list, ii. p. 25, n. 3 (1900); Hellm. Nov. Zool. xii. p. 302 (Pará) (1905).

PŒOCEPHALUS Sw.

Since the publication of vol. xx. of the 'Catalogue of Birds' several species of this genus have been divided and many subspecies have been described; but their characters are so very slight that I doubt whether, without the help of the locality, they would be recognised by the authors themselves. This is the case with the forms of *P. robustus*, *P. fuscicollis*, *P. flavifrons*, and especially of *P. meyeri*.

PŒOCEPHALUS ROBUSTUS (Gm.); Rchnw. Journ. f. Orn. 1892, p. 234; Shell. B. Afr. i. p. 138 (1896); Woodward Bros. Natal Birds, p. 125 (1899); Rchnw. Vög. Afr. ii. p. 7 (1902); W. Sclat. B. of S. Afr. iii. p. 224 (1903).

PŒOCEPHALUS FUSCICOLLIS (Kuhl); Rchnw. Journ. f. Orn. 1892, p. 234; id. Vög. D.-O.-Afr. p. 99 (1894); Sharpe, Hand-list, ii. p. 25, n. 2 (1900); Marshall, Ibis, 1900, p. 254; W. Sclat. B. of S. Afr. iii. p. 226 (1903).

Pœocephalus pachyrhynchus Hartl.; Rchnw. Journ. f. Orn.

1892, p. 234; 1897, pp. 13, 53 (Togo); 1898, p. 313 (=*fuscicollis*).

Poicephalus robustus fuscicollis Rchnw. Vög. Afr. ii. p. 7 (1902), p. 714 (1903).

Pœocephalus kintampoensis Alex. Bull. B. O. C. xii. p. 10 (1901); Ibis, 1902, p. 369 (=*fuscicollis* fide Reichenow).

Dr. Reichenow, after having separated *P. pachyrhynchus* from *P. fuscicollis* in 1892, has again united them in 1902, as I did in the 'Catalogue of Birds.' He also thinks that *P. kintampoensis* Alex. is the same bird.

PŒOCEPHALUS RUBRICAPILLUS Forbes & Robinson, Bull. Liverp. Mus. i. p. 15 (1897) (W. Africa); Sharpe, Hand-list, ii. p. 25, n. 3 (1900).

Forbes and Robinson have described two birds in the Liverpool Museum which had been kept in confinement. They differ from *P. fuscicollis* in having the silvery-grey or silvery-brown feathers of the head and neck broadly tipped with red.

According to Dr. Reichenow they are cage-varieties of *P. fuscicollis*.

PŒOCEPHALUS SUAHELICUS Rchnw.

Phæocephalus levaillanti Kirk (nec Lath.), Ibis, 1864, p. 329.

Pionias fuscicollis Böhm (nec Kuhl), Journ. f. Orn. 1882, p. 208.

Pœocephalus fuscicollis Böhm (nec Kuhl), Orn. Centralbl. 1882, p. 130; Rchnw. Journ. f. Orn. 1891, p. 145; Salvad. Cat. B. xx. p. 364 (pt.) (1891); Shell. B. Afr. i. p. 139 (pt.) (1896).

Pœocephalus suahelicus Rchnw. Journ. f. Orn. 1898, p. 314 (E. Africa); Sharpe, Hand-list, ii. p. 25, n. 5 (1900).

Poicephalus robustus suhaelicus Rchnw. Vög. Afr. ii. p. 8 (1902).

An eastern representative form of *P. fuscicollis*, which it resembles in the brownish-grey colour of the head and neck, but from which it differs in the weaker and smaller bill, weaker than in *P. robustus*.

Hab. Eastern Africa.

The male has the vertex as well as the forehead tinged with red.

Pœocephalus angolensis Rchnw. Journ. f. Orn. 1898, p. 314 (Angola, Damaraland) ; Sharpe, Hand-list, ii. p. 25, n. 4 (1900).

Pœocephalus robustus var. *angolensis* Rchnw. Vög. Afr. ii. p. 8 (1902).

This form differs from *P. robustus* in having the back and upper wing-coverts much paler, and the lower parts of a paler green. Neither this nor the preceding form is very distinct.

Pœocephalus guglielmi (Jard.) ; Shell. B. Afr. i. p. 139 (1896) ; Rchnw. Vög. Afr. ii. p. 9 (1902).

Pœocephalus aubryanus Souancé ; Oust. Nature, 1893, p. 60 ; Shell. B. Afr. i. p. 139 (1896) ; Hartert, Nov. Zool. viii. p. 31 (Sakarumbi) (1900).

Pœocephalus rüppelli (laps. cal.) Boc. Jorn. Lisb. 1892, p. 250.

Pœocephalus guglielmi Sjöst. (nec Jard.) Sv. Vet.-Akad. Handl. xxvi. p. 44 (1895).

Poicephalus guglielmi aubryanus Rchnw. Vög. Afr. ii. p. 10 (1902).

Pœocephalus massaicus Fisch. & Rchnw. ; Rchnw. Vög. D.-O.-Afr. p. 99 (1894).

Pœocephalus massaicus Sharpe, Ibis, 1892, p. 312 (Mau) ; Shell. B. Afr. i. p. 139 (1896) ; Sharpe, P. Z. S. 1900, p. 599.

Poicephalus massaicus Neum. Journ. f. Orn. 1899, p. 61.

Poicephalus guglielmi massaicus Rchnw. Vög. Afr. ii. p. 10 (1902).

Pœocephalus fuscicapillus (Verr.) ; Shell. Ibis, 1893, p. 12 ; 1894, p. 9 ; Rchnw. Vög. D.-O.-Afr. p. 99 (1894) ; Sharpe, Ibis, 1897, p. 502 ; Shell. Ibis, 1897, p. 548 ; 1898, p. 556 ; 1901, pp. 167, 176 ; id. B. Afr. i. p. 139 (1896) ; Rchnw. Jahrb. Hamb. 1893, p. 11 ; id. Vög. D.-O.-Afr. p. 99 (1894) ; Sharpe, Ibis, 1897, p. 502 ; Woodw. Bros., Natal

Birds, p. 126 (1899); W. Sclat. B. of S. Afr. iii. p. 227 (1903).

Poicephalus fuscicapillus Neum. Journ. f. Orn. 1899, p. 61; Rchnw. Vög. Afr. ii. p. 16 (1902).

Pœocephalus crassus Sharpe; Shell. B. Afr. i. p. 139 (1896); Sharpe, Hand-list, ii. p. 26, n. 10 (1900).

Poicephalus crassus Neum. Journ. f. Orn. 1904, p. 376.

I have expressed a doubt whether the type specimen of this species could be a young bird of *P. flavifrons*, but Herr Neumann (*l. c.*) declares *P. crassus* to be a perfectly distinct species, which can easily be recognised by the olive-brown colour of the breast sharply defined from the green of the lower parts. According to him the few yellow feathers on the brown head have no meaning!

Pœocephalus flavifrons (Rüpp.); Shell. B. Afr. i. p. 139 (1896).

Poicephalus flavifrons Rchnw. Vög. Afr. ii. p. 18 (1902); Neum. Journ. f. Orn. 1904, pp. 375–376.

Pœocephalus aurantiiceps Neum.

Poiocephalus flavifrons auranteiceps Neum. Journ. f. Orn. 1904, p. 376 (Sobat-district); Rchnw. Vög. Afr. iii. p. 822 (1905).

Under this name Herr Neumann has separated from *P. flavifrons* a form from the region of the sources of the Sobat, having the head orange-red instead of yellow or orange-yellow.

Pœocephalus senegalus (Linn.); Rend. Ibis, 1892, p. 225; Shell. B. Afr. i. p. 139 (1896); Salvad. Ann. Mus. Gen. (2) xx. p. 780 (1901); Rchnw. Vög. Afr. ii. p. 17 (1902).

Pœocephalus wersteri (Goffin); Shell. B. Afr. i. p. 136 (1896); Rchnw. Journ. f. Orn. 1897, p. 13 (Togoland); Hartert, Nov. Zool. vi. p. 408 (Gambaga) (1899); Alex. Ibis, 1902, p. 370 (Kwobia).

Poicephalus senegalus versteri Rchnw. Vög. Afr. ii. p. 17 (1902).

Pœocephalus rufiventris (Rüpp.); Sharpe, Ibis, 1892, p. 311; Rchnw. Vög. D.-O.-Afr. p. 99 (1894); Shell. B. Afr. i. p. 139 (1896); Neum. Journ. f. Orn. 1899, p. 61; Rchnw. Vög. Afr. ii. p. 15 (1902).

Herr Neumann remarks that the place "Serian," whence the type of *P. simplex* (= *rufiventris* ♀) came, is not on the Victoria Nyanza as stated in the 'Catalogue of Birds,' but in Masai-land.

Pœocephalus meyeri (Cretzschm.); Shell. B. Afr. i. p. 139 (part.) (1896).

Poicephalus meyeri Neum. Journ. f. Orn. 1898, p. 501; Rchnw. Vög. Afr. ii. p. 11 (1902).

This species has been lately split into several forms or subspecies.

The typical form according to Neumann, followed by Dr. Reichenow, is confined to Kordofan and Abyssinia. The characters assigned to it are—the rump yellowish green, the under-parts green, quite without any blue tinge, and the upper-parts with an olive-green wash. Wing 145–151 mm.

Pœocephalus matschiei Neum.; Sharpe, Hand-list, ii. p. 26, n. 19 (1900).

Pœocephalus meyeri Rchnw. (nec Cretzschm.) Journ. f. Orn. 1891, p. 146; id. Vög. D.-O.-Afr. pp. 92, 100, f. 45 (1894); Shell. Ibis, 1899, p. 378.

Poicephalus matschiei Neum. Journ. f. Orn. 1898, p. 501 (E. Africa, Ugogo to Masai-land).

Poicephalus meyeri matschiei Neum. Journ. f. Orn. 1899, p. 63; Rchnw. Vög. Afr. ii. p. 12 (1902).

Similar to *P. meyeri*, but upper-parts darker, the grey-brown colour of the head, neck, back, and wings darker, without the olive-green tinge, the rump of a beautiful blue quite without green tinge, and the under-parts blue-green. Wing 146–152 mm.

Hab. East Africa.

Dr. Reichenow mentions a specimen obtained by Dr. Fulleborn in Konde-land, which is intermediate between *P. matschiei* and *P. reichenowi*.

PŒOCEPHALUS ERYTHREÆ (Neum.); Sharpe, Hand-list, ii. p. 26, n. 17 (1900).

Pæocephalus meyeri Sharpe (nec Cretzschm.), Ibis, 1892, p. 312; Neum. Journ. f. Orn. 1898, p. 501 (part.); 1899, p. 62.

Poicephalus meyeri erythreæ Neum. Orn. MB. vii. p. 25 (1899) (N.E. Africa: Bogos-land, Anseba River); Alex. Ibis, 1900, p. 429 (= *meyeri*).

Poiocephalus meyeri virescens Rchnw. Vög. Afr. ii. p. 12 (= *erythrææ*) (1902).

Herr Neumann describes this form as having the bluish rump more green than in typical *P. meyeri*, while Dr. Reichenow says that in *P. meyeri virescens* the rump and upper tail-coverts incline more to greenish.

I do not understand what reasons have induced Dr. Reichenow to give a new name to this form already named by Herr Neumann.

PŒOCEPHALUS TRANSVAALENSIS Neum.; Sharpe, Hand-list, ii. p. 26, n. 18 (1900).

Pæocephalus meyeri, part., Salvad. Cat. B. xx. pp. 373–375 (1891); Marsh. Ibis, 1900, p. 254; Alex. t. c. p. 429 (Zambesi); W. Sclat. B. of S. Afr. iii. p. 228.

Poicephalus meyeri transvaalensis Neum. Orn. MB. vii. p. 25 (1899) (Südostafrika; Transvaal); Alex. Ibis, 1900, p. 430 (= *meyeri*).

Similar to the typical form, from which it differs in the less olive-green tinge of the upper-parts and in the longer wing, 148–160 mm.

Hab. Southern East Africa.

According to Capt. Alexander, this form is not different from typical *P. meyeri*.

PŒOCEPHALUS DAMARENSIS Neum.; Sharpe, Hand-list, ii. p. 26, n. 20 (1900).

Pæocephalus meyeri Fleck (nec G. R. Gr.), Journ. f. Orn. 1894, p. 395.

Poicephalus damarensis Neum. Journ. f. Orn. 1898, p. 501 (Damara-land).

Poicephalus meyeri damarensis Rchnw. Vög. Afr. ii. p. 13 (1902).

Similar to *P. matschiei*, but with the wings longer (160–165 mm.) and the under-parts more bluish. According to Dr. Reichenow, the brown colour of the upper-parts is more grey.

Hab. Western South Africa.

Pœocephalus reichenowi Neum.; Sharpe, Hand-list, ii. p. 26, n. 21 (1900).

Poicephalus reichenowi Neum. Journ. f. Orn. 1898, p. 501 (N. Angola: Melange, Quango River).

Poicephalus meyeri reichenowi Rchnw. Vög. Afr. ii. p. 14 (1902).

This form has been distinguished from its allies on account of the much darker upper-parts. Head, upper back, and wings blackish brown-grey; pileum quite black; lower parts as in *P. matschiei*. Wing 153–160 mm.

Hab. North Angola and probably the whole Congo district.

Pœocephalus saturatus Sharpe, Bull. B. O. C. xi. p. 67 (North Ankole, Equat. Afr.) (1901); id. Ibis, 1892, p. 109; Rchnw. Vög. Afr. ii. p. 14 (remark) (1902); Jacks. Ibis, 1906, p. 513.

"*P.* similis *P. meyeri* et speciebus affinibus, sed supra saturate brunneus, fere nigricans, olivaceo-viridi adumbratus; dorso postico et uropygio smaragdino-cyaneis, supracaudalibus flavidius viridibus; pectore et abdomine smaragdino-gramineis. Long. tot. 8·0 poll., culm. 0·95, alæ 5·8, caudæ 2·7, tarsi 0·6."

Hab. North Ankole, 3000 feet.

Dr. Reichenow remarks that it remains to be decided whether this bird is really different from *P. reichenowi*.

Pœocephalus rueppelli (G. R. Gr.); Fleck, Journ. f. Orn. 1894, p. 395; Shell. B. Afr. i. p. 139 (1896); Rchnw. Vög. Afr. ii. p. 14 (1902); W. Sclat. B. of S. Afr. iii. p. 229 (1903).

[To be continued.]

XXXVIII.—*On an unnamed Species of Owl from South Africa.* By W. R. Ogilvie-Grant.

The late Carlo, Freiherr von Erlanger, very properly separated the northern form of *Scops leucotis* (which ranges from Senegal to Abyssinia and Somaliland) from the southern form met with in South Africa; but in naming the former *Asio leucotis nigrovertex* (*cf.* J. f. O. 1904, p. 233, pl. xix.) he overlooked the fact that he was renaming the typical form, which was described and figured by Temminck from Senegal [*cf.* Pl. Col. ii. pl. 25 (no. 16) (1824)]. Temminck's figure clearly shews the narrow barring of the quills and tail-feathers characteristic of the northern bird at all ages; but the black patch on the crown is not precisely mentioned, which possibly indicates that the bird described was not quite adult.

The two allied species should therefore stand as follows:—

Scops leucotis.

Strix leucotis Temm. Pl. Col. ii. pl. 25 (no. 16) (1824).

Asio leucotis nigrovertex Erl. J. f. O. 1904, p. 233, pl. xix. (upper figure).

The British Museum contains fifteen examples of this species from the following localities:—

River Gambia; Bathurst; Ilorin; Abeokuta; White Nile; Somaliland.

Scops erlangeri, nom. nov.

Asio leucotis leucotis Erl. J. f. O. 1904, p. 233, pl. xix. (lower figure).

Asio leucotis W. L. Sclater, B. S. Afr. iii. p. 243 (1903).

The southern form is represented in the British Museum by nineteen specimens from the following localities:—

Nyasaland; Tete, Zambesi R.; Mashonaland; Makalaka Country; Bamangwato; Transvaal; Durban; Damaraland.

This species differs from the typical *S. leucotis* in having the dark bars on the primary-quills and tail-feathers much wider and less numerous, and in lacking the uniform black patch on the crown, all the feathers of that part, even in the darkest specimen, being mottled with black and white.

XXXIX.—*The Breeding-grounds of the Rosy Gull.*—Part III.

By S. A. Buturlin.

In my former papers (*suprà*, pp. 131, 333) the breeding-habits of the Rosy Gull (*Rhodostethia rosea*), as observed in the Kolymá delta, were described up to the 10th of July. On the 11th of July I visited one of the colonies near Pokhodskoe. I found on that island some eggs of *Sterna paradisea* (*S. macrura* Naum.), a nest, with two incubated eggs, of *Colymbus arcticus*, and one of *Mergus serrator*. No Rosy Gulls were to be seen on the lake.

On the 13th of July I went from Pokhodskoe northward in a boat, and, while passing some islands of the delta, heard the well-known cry of *Rhodostethia rosea*, but had no time to search for the bird. Several days were passed on one of the northernmost islands of the Kolymá delta ("Kamenny"), where the ground is unfavourable for this species, being a piece of high, rocky tundra. From the 18th to the 20th of July several heavy snowstorms raged, and there was frost at night. In the evening of the 21st of July I was at Ssukharnoe (about 62½° N.), a tiny village on the mainland, near the mouth of the easternmost channel of the Kolymá. The ground there is a high rocky tundra, with mountains rising to 3000 feet, some twelve or fifteen miles off the shore. Near the village a valley (about a mile and a half wide) is formed by a tributary of the Kolymá (the Ssukharnaya), with shallow lakes and swamps. Whilst watching a colony of *Spermophilus* through dense clouds of gnats, I heard once or twice the call of *Rhodostethia rosea*. In the evening of the 22nd I went to the same part of the Ssukharnaya valley, to an island on a lake. Here a nest of *Phalaropus lobatus* was found with four young, some of them fully fledged, though shewing down on the head and neck; also young of *Tringa maculata* and *Phalaropus fulicarius*. There were likewise colonies of *Larus vegæ* and *L. glaucescens* (?) with young in down, but Rosy Gulls were nowhere to be seen: only some shells of their pretty eggs and a wing of a young bird were found near the nest of one of those greedy robbers of the tundra, *Larus vegæ*.

Whilst I was engaged in searching through the island, I suddenly observed three small Gulls flying silently about with uneasy strokes of the wing, in a somewhat owl-like manner, and their silence reminded me of *Xema sabinii* during the spring migration. After a successful right and left shot, the surviving bird became more shy, flying much higher. I missed it once, but after settling several times on the island and on the other side of the lake, the bird (always silent) flew nearer again and was bagged. These were young *Rhodostethia rosea,* easily identified by the form of the tail, and only one was without the remains of down on the head.

I did not realize then that these would be the last Rosy Gulls I was to see alive, but so it was. When back in Pokhodskoe (30th July) I heard from my companion Mr. T. A. Shulga, a botanist, that between the 13th and the 18th of July an odd Rosy Gull was seen two or three times in the neighbourhood (always an adult), and then was lost to view. I visited along with Mr. Shulga all the breeding colonies, even those some fifteen miles distant, but in vain; and one of the oldest local hunters told me that after about the end of July Rosy Gulls are never seen in the Kolymá delta, as they go to sea with their young while they are still in down.

And indeed it must be so. July 11th, when I found one of the colonies deserted, was somewhat early for the young to fly; and should all these swarms of Rosy Gulls migrate to the sea-shore on the wing, my friend Shulga and I, being in different parts of the delta, and every day in the open air, ought to have noticed their migration. Further, on July the 7th, having disturbed a colony of Rosy Gulls with the young in down, I noticed a few hours later that the colony was quite deserted (by Rosy Gulls, but not by *Sterna paradisea*), and that partly swimming, partly on foot, they had gone to the other end of the lake (or rather the chain of swampy lakes), nearly a mile distant.

This exceedingly early northward migration in the half-downy stage of plumage explains why both young and old *Rhodostethia rosea* have been observed during August, or even seen after the middle of July, far away from their breeding-grounds[*]. And though the last Polar expedition of the late Baron Toll met with Rosy Gulls near Kotelny Island on the 7th and 8th of August (1902), and at Bennett Island in August 1902 and Sept. 11th, 1901, this only proves to me that the bird does not breed there. The same may be said about Franz-Josef-land, where the Duke of Abruzzi's expedition during one summer in the north, and the Jackson-Harmsworth expedition during three summers in the south of that land, failed to find the bird[†], while Dr. Nansen in 1895 met with the first bird only on the 14th of July.

Sandy or pebble-clad beaches, rocky slopes, and high stony tundra of such polar islands as Franz-Josef-land, Novaya Zemlia, Bennett Island, or Wrangell-land, are as unlikely places for the Rosy Gull to breed on as floating ice. During the nesting-season, in June and the early part of July, it is a frequenter of low, *grassy*, *flat* swamps, on the tundra or even adjoining parts of the taiga.

This bird is said by the natives to breed near Ssredny-Kolymsk (67° 26½′ N.), and a specimen with the wings not fully developed was brought to me there. As it breeds abundantly at v. Malaya on the Alazeya River (just to the south of 68°)[‡], this is quite probable. One of the natives prepared for me some bird-skins near v. Abyi (which lies on a low plain, full of lakes, just to the west of the Indigirka River, about 68½° N., 145° E.); and among them were some skins of *Rhodostethia rosea*, which is, according to this native, a common bird there in the first half of the summer. A nest with eggs was also found by Mr. Rajnowski in the delta of the Indigirka, near Russkoe Ustje (about 70° N. and 149½° E.). Lastly, I obtained in Verkhojansk (67° 33½′ N., about 133° E.) skins of *Rhodostethia rosea* (along with those of *Xema sabinii*, *Somateria stelleri*, and some others, all in breeding-dress); and was informed that a large flock of Rosy Gulls had visited that place in the spring, but that the case was quite exceptional.

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[*] *Cf.* Eagle Clarke, 'Ibis,' April 1898, p. 263.

[†] I may add, that in 1905, when my observations were made, the spring in the Kolymá Basin was somewhat late and the summer unusually cold.

[‡] Where no tundra occurs.

So I think that the Tas-khayakh-tag Mts., a wild and craggy watershed between the Yana and Indigirka basins, must form the western limit of the breeding-ground of the Rosy Gull, as it is also the western limit of *Tringa sakhalina* Vieill., *Colymbus pacificus* Lawr., *Somateria fischeri* Brdt.; and the eastern limit of *Tringa alpina, Numenius minutus* Gould, *Pœcile lenensis* Pall. (*obtecta* auct.), and other birds. The southern limit of the Rosy Gull is at about 67½° N., and it has not been met with breeding north of 70°.

Young birds when just killed have blackish-brown eyes and the edges of the eyelids (not prominent) of the same dark colour. The feet are reddish fleshy, with a slight bluish tinge and blackish nails, and with the upper parts of the tarsus swollen (as is usually the case with young waders). The bill is greyish brown, paler on the proximal half and with the base of the mandible flesh-coloured; this pale colouring is only just visible in the older specimens, but extends over two-thirds of the base of the bill in the youngest specimen. The wing is more rounded than in the old bird, the primaries not being yet fully developed, so that the second is longest, the third about five mm. and the first about ten mm. shorter. The tail also is not so cuneate as in the adult, and the central pair of rectrices in the youngest specimen is shorter than the others; nevertheless the form of the tail is plainly cuneate, each inner pair of feathers being somewhat longer, so that the external pair is some 12–17 mm. shorter than the longest of the innermost rectrices.

The young birds are fully feathered, the oldest having no trace of down, and the youngest only traces on the forehead, ear-coverts, and chin. I speak of my Ssukharnoe specimens, but that from Ssredny-Kolymsk has down still adherent, not only on the feathers of the head and neck, but also on those of the thighs and upper tail-coverts.

The first plumage of the Rosy Gull is as follows:—All the under-parts white, strongly tinged on the chest and breast with pale greyish cinnamon-buff, this hue being richer and more ochreous in the younger specimen, which has the flanks and abdomen similarly tinged. But the oldest bird has the flanks nearly and the abdomen quite without this tinge, and the latter of a somewhat alabaster-roseate hue. The preapical parts of the feathers of the chest and upper breast are somewhat vermiculated with dark greyish brown, these vermiculations being most pronounced in the youngest and scarcely perceptible in the oldest specimen. The lining of the wings is white, edged with brownish.

The upper-parts are dark brown barred with ochreous on the ends of the feathers. These ends are one millim. wide on the crown or neck, while they are nearly confluent on the longer scapulars in the younger bird; in other specimens they are narrower from abrasion. Forehead greyish brown, a long but not well-defined whitish superciliary stripe, a greyish brown spot in front of and below the eye, covering also the ears. On the hind part of the neck *of older specimens* is a scarcely perceptible narrow whitish collar and some white feathers with ochreous ends (and some of them with a dark preapical part) between the shorter scapulars. The lower back and rump differ from the rest of the upper-parts in the extreme narrowness of the ochreous ends of the feathers and, on the rump, in the white on the bases of them being much more developed, the well-marked visible and dark brown parts of the feathers being reduced to a narrow subapical bar. These bars are narrower in older specimens. The brown of the upper-parts is more blackish, and the ochreous bars are less whitish, than in the young of *Xema sabinii.*

Lesser wing-coverts of the foremost and inner half of the wing white, with narrow ochreous tips; secondaries with their larger coverts white (these coverts slightly tinged with ochreous in younger specimens). All the primary-coverts (including the lesser) are blackish-brown, the primaries are white with blackish-brown ends and are tinged with dark blackish-grey near the shaft of the basal half of the feather; these dark colours being more and more developed on the outer primaries and on their outer webs, so that the three outer primaries are practically blackish-brown with the inner half of the inner web (excluding the end) white. On the fourth primary the white is extended on the outer web, only in its preapical part, about 10 mm. long; thus on the extended wing taken as a whole it looks like a dark zigzag band on a white ground. The ends of the primary-coverts and remiges are ochreous in younger birds. Tail white, with a narrow ochreous tip and a blackish brown apical band, the ends of three central rectrices (or four in the younger bird) being dark for a length of from 20 (on the outer pair) to 40 mm. (on the central pair).

In the Ssredny-Kolymsk specimen, the youngest of all, the three outer primaries are still quite undeveloped and the tail-feathers are of *equal length.*

In all the specimens the shafts of the rectrices are blackish in the dark part, and white in the white part of the feathers.

Old birds require no further description. I need only say that even now, a year after they were killed and skinned, they (at least older males) cannot be described as having the head and neck, with under-parts, rump, and tail *white suffused* with pink, as the pink colouring is so intense, though it has a somewhat salmon-coloured tinge[*]. The bases of the pearly-grey feathers of the back and scapulars are also roseate. The fat of this bird is nearly as orange as that of *Hæmatopus ostralegus.*

Wesenberg, Esthonia, Russia,
July 22nd, 1906.

XL.—*On the Birds collected and observed during the Voyage of the 'Valhalla,' R.Y.S., from November* 1905 *to May* 1906. By Michael J. Nicoll, F.Z.S., M.B.O.U.

(Plate XXI.)

In the autumn of 1905 Lord Crawford once more most kindly invited me to accompany him as naturalist during his winter-cruise on the 'Valhalla,' and we left Cowes for Las Palmas on November 6th.

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[*] But the eggs of the bird, I may add, have somewhat faded.

A few hours before our departure I saw a young Sabine's Gull (*Xema sabinii*) flying round the ship in Cowes roads in company with Kittiwakes and Herring-Gulls. In the Bay I saw Manx Shearwaters, Gannets, and Storm-Petrels, and a Greenfinch, a Willow-Wren, and a Stock-Dove came on board.

Just before sighting Gran Canaria many small Petrels (*Oceanodroma castro*) followed the ship, as well as numbers of Leach's Petrel (*O. leucorrhoa*), and the latter species was our constant companion down to a little south of the Line. On November 13th we anchored at Las Palmas. During our stay there I obtained examples of the following species or birds:—*Sylvia conspicillata*, *Phylloscopus rufus fortunatus*, *Anthus berthelotі*, *Motacilla boarula*, *Parus teneriffæ*, *Carduelis elegans parva* (Tsch.), *Linota cannabina nana* (Tsch.), *Erythrospiza githaginea*, *Passer hispaniolensis*, *Petronia rupestris*, *Emberiza miliaria thanneri* (Tsch.), *Larus cachinnans*, and *Puffinus kuhli*.

On November 22nd we finally left Las Palmas for St. Paul's Rocks, while two days later a Song-Thrush (*Turdus musicus*) flew round the ship. On December 2nd we reached St. Paul's Rocks, but owing to the swell were unable to land. All the three species of sea-birds met with on our visit in 1902 (*cf.* Ibis, 1904, p. 36) were seen in fairly large numbers and a few sharks were caught. As the sea shewed no sign of going down, we left for Bahia. During the passage we saw several Shearwaters (*Puffinus kuhli*) and Petrels (*Oceanodroma leucorrhoa*), but nothing eventful happened until December 7th, when in lat. 7° 14′ S., long. 34° 25′ W., Mr. Meade-Waldo and I saw a remarkable sea-creature, which we have written of elsewhere[*].

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[*] See P. Z. S. June 19th, 1906.

On December 10th we anchored at Bahia, where we were delayed until December 30th. During our stay we made several excursions to the Island of Itaparica, about five miles from Bahia, and on two occasions camped for two nights there. I collected examples of seventy species of birds on this island, as well as mammals. The following notes refer to some of them :—

Emberizoides macrurus.—Only found on one small marsh, where several individuals were seen feeding on grass-seeds, and three adults were obtained, besides an immature bird.

Furnarius figulus and *Arundinicola leucocephala* were met with only after rain; only one example of the latter species was seen.

Myiarchus pelzelni Berl.—This rare and little-known species was found singly or in pairs among the clumps of mango-trees which grow in abundance in the open glades of the forest. At a distance it is easily mistaken for *M. ferox*; in fact, when working out the collection I obtained on Itaparica in 1902, I referred an example of *M. pelzelni* to *M. ferox*. Herr C. E. Hellmayr having kindly pointed out to me the difference between the two forms, I kept a special look out for them during this voyage and obtained four examples of *M. pelzelni*. This species is generally much paler than *M. ferox*, especially as regards the crown and mantle. The throat and chin are of a more pure bluish grey colour and the abdomen slightly yellowish. The bill of *M. pelzelni* is also pale brown, not dark brownish black as in *M. ferox*, while the tarsus is usually shorter and slighter.

Elainea albivertex.—Only one example of this species was met with on Itaparica.

Chætura fumosa.—A number of these little Swifts usually appeared during the afternoon on a small lake near our camp, and after a few minutes disappeared and were seldom seen again until the following afternoon.

Chrysomitris yarrelli.—Several examples of this species were purchased alive in the market-place at Bahia, but they all died. I skinned two of them.

From Bahia we sailed to South Trinidad Island, where the sea was smooth, and we made a good collection, landing on two days. We obtained examples of the following species*:—

GYGIS CRAWFORDI.

Gygis candida Saunders, P. Z. S. 1880, p. 163; id. Cat. B. B. M. xxv. p. 149.

Gygis alba Sharpe, Ibis, 1904, p. 217 (S. Trinidad).

Gygis crawfordi, Nicoll, Bull. B. O. C. xvi. p. 102.

This is the most abundant species on South Trinidad; from the shore to the top of the island it was met with in thousands. I obtained ten specimens: six males, four females, also a young alive, and one egg.

Gygis crawfordi bird is a very distinct species, differing from *G. alba* in the following particulars: Bill wholly black (not hyacinth-blue at the base as in the latter) and much more slender: the nostrils are situated nearer the forehead, and the wing is also longer than in *G. alba*.

Probably all examples of the White Tern from the Atlantic are referable to this species, as a glance at the map will shew how completely it is isolated. A few pairs breed on Fernando Noronha Island, and it has been also recorded from St. Helena and Ascension as a breeding species, but is not yet reported from the Cape of Good Hope (*cf.* Stark & Sclater, Birds of S. Africa, iv. p. 118). *Gygis alba*, however, ranges over the whole of the tropical portions of the Pacific and Indian Oceans.

I fully agree with Dr. Hartert (Nov. Zool. v. p. 67) that Sparrman's name *Sterna alba* should stand for the Common White Tern, the *Sterna candida* of Gmelin. Sparrman's figure (Mus. Carls. ii. fasc. 1, no. 2) is not at all bad and is easily recognisable as the White Tern; although the bill and legs are coloured black and the black feathers round the eye are not represented. The great mistake is that he (Sparrman) says that it is found "also" at the Cape of Good Hope. Sparrman's description of his *Sterna alba* was evidently taken from specimens from the South Pacific, and I have therefore named the Atlantic species *Gygis crawfordi*, after the Earl of Crawford.

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* *Cf.* remarks above, p. 395.

This species breeds on the branches of the dead trees with which South Trinidad is covered; the egg is placed on a nick or depression in the branch. Many young or hard-set eggs were also found on small ledges of rocks higher up the island, while at its summit the birds were nesting on the tops of the dead tree-fern trunks from which the foliage had rotted. One bird which I found covering its young I purposely drove off, to see if the chick would be thrown from its insecure resting-place by the sudden departure of its parent, but, although it was almost jerked off, it hooked its head over the branch and by means of its bill and strong hooked claws soon righted itself. The old birds were exceedingly tame, and could be easily caught with a butterfly net while hovering in front of the intruder, and when photographing a pair of adults on a dead tree I had to drive away others, which were hovering like a cloud of mosquitoes in front of the camera-lens.

ANOUS STOLIDUS (Linn.).

Anous stolidus Saunders, Cat. B. B. M. xxv. p. 136.

The Common Noddy, which was very plentiful on South Trinidad at the time of our visit, does not seem to have been noticed by the explorers of the 'Discovery.' We found it breeding in some numbers, principally close to the shore. Several pairs, however, were nesting on a large square rock some little way up the hillside; they had eggs and young at the time of our visit, but were not nearly so tame as the White Terns. Six adults were obtained.

ŒSTRELATA ARMINGONIANA Gigl. & Salvad.

Œstrelata armingoniana Gigl. & Salvad. Ibis, 1869, pp. 62, 66.

Œstrelata mollis Saunders, P. Z. S. 1880, p. 164.

Œstrelata armingoniana Salvin, Cat. B. B. M. xxv. p. 413; Nicoll, Ibis, 1904, p. 41; Bull. B. O. C. xvi. p. 102.

One male and one female.

The three supposed species of *Œstrelata* on this island are very confusing. I feel sure, however, that there are at most two species only, and that if a sufficiently large series were examined it would be found that Dr. Sharpe's *Œ. wilsoni* is either a freshly moulted *Œ. armingoniana* or another phase of plumage of that species. The example of *Œ. armingoniana* which was obtained by Lord Crawford on South Trinidad in 1874, and is now in the British Museum, answers perfectly to the description of that species by Giglioli & Salvadori, as also do the two specimens which I obtained there, as mentioned above. *Œstrelata wilsoni* only differs from these examples in being slightly slaty above, and in having a somewhat larger bill; the latter character, however, is variable, as some specimens of *Œ. wilsoni* have smaller bills than others. I can give no field-notes on this species, as until I compared my specimens with that in the Museum I had no idea that they belonged to the present species, and never having seen a skin of *Œ. armingoniana,* I was looking for a much browner bird.

ŒSTRELATA WILSONI Sharpe.

Œstrelata wilsoni Sharpe, Bull. B. O. C. xii. p. 49; Nicoll, Bull. B. O. C. xvi. p. 103.

Six males and seven females, light and dark forms.

This species, if it is distinct from *Œ. armingoniana,* which I much doubt, is the most abundant Petrel and, next to the White Tern, the most abundant bird on South Trinidad. At the time of our visit, on January 3rd & 4th, it was only commencing to breed and I found but one egg. Several individuals of the light phase were sitting together in pairs in holes and under overhanging parts of the soft and crumbling rocks up the hill-side. I saw no birds of the dark phase sitting at all. The dark phase of this bird is very variable, and the specimens obtained were of every variety, from a dark-breasted bird nearly as dark as *Œ. trinitatis*, up to a bird with an almost white breast, having only the extreme tips of the feathers grey. The darkest examples had the tarsus almost black, as in *Œ. trinitatis*, the blackness of the toes and webs being only just distinguishable. These darker-legged dark-breasted birds *may* be in the immature stage of plumage, as the dark form is the more abundant. I several times heard these Petrels make a bubbling sound somewhat resembling that of a female Cuckoo, as described by Dr. Wilson (Ibis, 1904, p. 212).

ŒSTRELATA TRINITATIS Gigl. & Salvad.

Œstrelata trinitatis Gigl. & Salvad. Ibis, 1869, p. 65.

Œstrelata trinitatis Salv. Cat. B. B. M. xxv. p. 413; Nicoll, Bull. B. O. C. xvi. p. 103.

Two adult males, one young male in down, one adult in spirit, and one skeleton.

This Petrel was not nearly so abundant as the former, and was only met with at some distance up the hill-side. At the time of our visit it had large downy young in similar situations on the rocks to those above mentioned. This species is, I think, distinct from the dark phase of *Œ. wilsoni*. All the examples that I saw and obtained were of a uniform chocolate-brown, with black bills and black tarsi and feet. The young bird is covered with dark grey down.

SULA PISCATOR (Linn.).

Sula piscator Saunders, P. Z. S. 1880, p. 163; Grant, Cat. B. B. M. xxvi. p. 432.

Sula piscatrix Sharpe, Ibis, 1904, p. 214.

Adult males and females. Imm. male and chick.

Bill lavender, pink at base, round eye pink; sac pinkish, base of sac bluish; tarsi and toes cherry-red.

This Gannet was fairly abundant at the time of our visit, especially at the top of the island, 2000 feet above sea-level, where there was a colony of nesting birds in some tall bushes, with all stages of young, but I saw no eggs. The young in moult were gaining their white plumage on the *head and neck*, and a few white feathers were scattered over the body. These birds were very tame, and could in some instances be caught by the hand.

FREGATA AQUILA (Linn.).

Fregata aquila Saunders, P. Z. S. 1880, p. 163; Grant, Cat. B. B. M. xxvi. p. 443.

Four males and six females, immature.

The Great Frigate-bird is very common on South Trinidad, but was not breeding at the time of our visit. Apparently this species was not noticed by the explorers in the 'Discovery.'

FREGATA ARIEL (Gould).

Fregata ariel Grant, Cat. B. B. M. xxvi. p. 447; Sharpe, Ibis, 1904, p. 214.

Bill black, pouch bright brick-red; tarsi and toes black.

I saw several examples of this species at South Trinidad, but obtained only one, an adult male, which was shot by Mr. Lindsay from the yacht as she lay off the island.

On January 5th we left South Trinidad and steamed up to Martin Vas Islets, which lie about twenty-six miles away. We did not land there, although, I should say, landing is quite possible. There were very few birds seen, the only one obtained being *Sterna fuliginosa*. Noddies (*Anous stolidus*) were comparatively abundant, and I saw one example of *Micranous leucocapillus*. There appeared to be no Petrels on Martin Vas at all. About midday we left for Tristan da Cunha.

On January 11th two Albatrosses (*Diomedea exulans*) were seen as well as a large Petrel, which, after looking at the skins in the British Museum, I have no doubt was *Œstrelata incerta*. From that day until we sighted Tristan da Cunha on January 17th, we saw numbers of Petrels and Albatrosses. Amongst those identified were *Majaqueus æquinoctialis, Œstrelata mollis, Œ. incerta, Puffinus assimitis, Diomedea exulans, D. chlororhyncha,* and *Phœbetria fuliginosa.* I am as certain of the identification of *Œ. incerta* as I can be without having obtained the birds. It is possible that it may breed on one of the Tristan group. When we reached Tristan da Cunha on January 17th, about 4 o'clock in the afternoon, I saw a number of birds, the most interesting being many individuals of our Great Shearwater (*Puffinus gravis*), which were flying about *in pairs.* As we had not time to go ashore the evening that we arrived, I had about an hour's shooting from a boat, and obtained examples of three species of sea-birds, one of which proves to be new to science. During that night a violent gale sprang up, and for three days we were lying off the island unable to land or even to get a boat down. At last, as our coal was running short, we were obliged to leave for the Cape.

I obtained examples of the following species at Tristan da Cunha:—

STERNA VITTATA Gmel.

Sterna vittata Saunders, Cat. B. B. M. xxv. p. 51; Eagle Clarke, Ibis, 1905, p. 259.

Two adult males, one adult female.

Iris black; bill, tarsi, and toes cherry-red.

Numbers of these Terns were flying around the island, and, as I saw several young birds just able to fly, I have no doubt that this species nests there.

PELECANOIDES DACUNHÆ.

? *Pelecanoides urinatrix* Eagle Clarke, Ibis, 1905, p. 264 (Gough Island).

Pelecanoides dacunhæ Nicoll, Bull. B. O. C. xvi. p. 103.

Two adult females.

This new Diving Petrel appeared to be fairly numerous at Tristan da Cunha, swimming, diving, and occasionally flying, about three hundred yards from the shore. I have not seen the example of *Pelecanoides urinatrix* obtained by the

'Scotia' at Gough Island, but possibly it may belong to this species, which differs from *P. urinatrix* in its much smaller size, especially as regards the bill and feet, its whiter throat, and its less marked and whiter flanks.

—DIOMEDEA CHLORORHYNCHA.

Diomedea chlororhynchos Gm. Syst. Nat. i. p. 568 (1788).

Thalassogeron chlororhynchus Salvin, Cat. B. B. M. xxv. p. 451.

Male and female adult.

Bill black, streak down culmen yellow, orange near tip of bill; a yellow ridge at base of bill; line of gape and a ridge of skin beyond the gape yellow; tarsi and toes flesh-coloured.

The immature plumage of this and many other species of Albatross yet remains to be described. We hear of travellers visiting the breeding-places of these birds, yet none seem to have thought of bringing home a series of the young. This Albatross was fairly numerous round the island, but in the short time that we were there I was only able to get two specimens. I believe that it was breeding at the time of our visit, and if we had had the good fortune to have fine weather, we should probably have been able to visit the nesting-place, which is situated on the top of the crater. I was told by two of the islanders who came on board that only the Mollymauks or small Albatrosses breed on Tristan da Cunha, *Diomedea exulans* nesting on Inaccessible Island.

I was also told by one of these men that the only land-bird left on the island was the Thrush, *Nesocichla eremita*; the Bunting (*Nesospiza dacunhæ*) and the Rail (*Porphyriornis nesiotis*) not being now found there. The Bunting, however, was said to be still common on Inaccessible Island, where there is also a Rail "*like a little black chicken.*" This is probably an undescribed species, unless my informant had seen only young birds, as the Tristan da Cunha bird is about the size of our Moorhen.

Antarctic Skuas (*Stercorarius antarcticus*) were also seen round this island, as well as Sooty Albatrosses (*Phœbetria fuliginosa*), *Œstrelata mollis*, and *Cymodroma grallaria*.

Between Tristan da Cunha and the Cape of Good Hope numbers of Petrels were seen, as well as Albatrosses (*D. exulans* and *D. chlororhyncha*), which were abundant for a few days, after which the latter disappeared. A few Great Shearwaters (*Puffinus gravis*) were also seen.

On January 24th, when about three days from the Cape, a Petrel, probably *Œstrelata incerta,* followed the ship all day, sometimes flying over the poop, but never near enough to drop on deck if shot, although I waited for it all day. *Œstrelata macroptera* was also seen. Early on January 28th Table Mountain was sighted, and at 8.30 A.M. we entered Table Bay. During our stay at Capetown Mr. W. L. Sclater most kindly arranged several excursions for us, the most interesting being a visit to Dassen Island. Although Mr. Sclater has described a visit he made to this island ('Ibis,' 1896, p. 519), I venture to think that a short account of our experiences may be of interest.

We left Capetown on February 3rd in the Government tug 'Magnet,' and returned late on the afternoon of the next day. During our passage to Dassen Island, about thirty-five miles distant, we saw numbers of Penguins (*Spheniscus demersus*), Cormorants (*Phalacrocorax capensis*), *Larus dominicanus, Majaqueus æquinoctialis, Diomedea melanophrys,* and one example of *D. fuliginosa*, also several Gannets (*Sula capensis*). We reached the island at seven o'clock in the evening, and were most kindly received by the lighthouse-keeper, who gave us rooms in his house for the night.

The most remarkable sight to those landing on this island is the enormous quantity of so-called Black-footed Penguins (*Spheniscus demersus*). "Jackass Penguin" is a much better name, as we soon discovered, for during the night several dozens of these birds collected outside the house and kept up a continual braying exactly resembling that of an ass. It is said that about nine millions breed upon Dassen Island. Their eggs are collected and sent to Capetown for eating. Two eggs are laid in a nest, usually in a hole in the ground or in a scooped-out hollow under the ice-plant with which the island is covered in places. It is an interesting sight to see the birds digging these holes and throwing out the sand with their feet.

Besides the Penguins, Cormorants (*Phalacrocorax capensis* and *P. neglectus*) were seen, the former being especially numerous. These birds are strictly preserved for their "guano," and during the breeding-time no one is allowed to go near the colony, as if the birds are driven from their eggs the Gulls (*Larus dominicanus*) swoop down and take them. Close to the Cormorants was a colony of Sacred Ibises (*Ibis æthiopica*), which we were told were very destructive to the young Cormorants, feeding on their intestines. This we found to be a fact, as, when handled, the young Ibises brought up portions of intestine. The nests of *Ibis æthiopica* are built close together, and resemble one large flat heap of rubbish with numerous depressions, in which the eggs are laid. I obtained several young Ibises for specimens, and kept two alive, which are now in the Gardens of the Zoological Society of London. A specimen of *Phalacrocorax neglectus* was also obtained and a young Penguin, which is now in the Zoological Gardens. Besides these birds we saw examples of the following species on Dassen Island: *Motacilla capensis, Hæmatopus moquini, Ægialitis pecuaria, Calidris arenaria, Strepsilas interpres, Machetes pugnax, Ossifraga gigantea.* Swallows (*Hirundo rustica*) were also fairly numerous. On the passage back I saw a Noddy (*Anous stolidus*). This is the first recorded occurrence of this species at the Cape of Good Hope.

The following day we climbed Table Mountain under the guidance of Mr. W. L. Sclater, and on another occasion visited Kalk Bay. I collected specimens of the following birds during my stay at Capetown, besides those obtained on Dassen Island:—

Cossypha iolæma.
Saxicola familiaris.
Dryodromas fulvicapilla.
Fringillaria capensis.
Chrysomitris totta.
Sphenœacus africanus.
Nectarinia famosa.
Anthobaphes violacea.
Cotile rufigula.
Phalacrocorax capensis.
Sula capensis.
Procellaria pelagica.
Majaqueus æquinoctialis.

From Capetown we steamed to Durban, where we coaled, and on February 15th we left for Europa Island, but a gale sprang up shortly afterwards and it was impossible to reach it. This gale finally developed into a cyclone, and we were unable to stop at any of the islands in the Mozambique Channel. The day after this cyclone (February 21st) a Nightjar (*Caprimulgus unwini*) flew on board and was secured. During the same day numbers of Waders were seen flying round the ship, Reeves, Whimbrels, Little Stints, &c., also many Swallows (*Hirundo rustica*). On February 23rd Mayotte, one of the Comoro Islands, was sighted, and after breakfast we entered the harbour. The Governor of the island kindly gave us permission to collect, and I obtained the following birds there during a stay of five days. We made an attempt to go to Anjouan, but owing to the bad weather were unable to land there.

TERPSIPHONE LINDSAYI.

Terpsiphone lindsayi Nicoll, Bull. B. O. C. xvi. p. 104.

One adult male.

This new species, I believe, never has a white stage, but is deep maroon when adult, with grey shoulders and a large blue mop-like crest. I unfortunately obtained only one specimen.

Grand Comoro has a brown species (*T. comorensis*), as also has Anjouan (*T. vulpina*).

I can give no field-notes on this bird, as I did not notice that it was of a different form until I got back on board and skinned it.

TERPSIPHONE MUTATA (Linn.).

Terpsiphone mutata Sharpe, Cat. B. B. M. vol. iv. p. 361.

Five males, one female, and two examples of uncertain sex.

Bill black, mottled with bluish grey; tarsi and toes *bluish grey*.

This Paradise Flycatcher is one of the commonest species on the island, the young brown birds being the more abundant at the time of our visit. One male specimen is in transition from the brown to the grey and white plumage of the adult. The note much resembles the call-note of our Blue Tit.

IXOCINCLA MADAGASCARIENSIS (P. L. S. Müll.).

Ixocincla madagascariensis Sharpe, Cat. B. B. M. vi. p. 45.

Iris dark brown; bill orange; tarsi and toes light brown.

Two males and three females, adult. One male imm.

This thrush-like Bulbul is a very abundant species in Mayotte. All the examples which I obtained were in very bad plumage, but I cannot see the slightest difference between the specimens from Mayotte and those from Madagascar. Joanna and Grand Comoro Islands are given in the 'Catalogue of Birds' as the habitat of *I. parvirostris*. I saw numbers of these birds (*I. madagascariensis*) at every part of the island that we visited, from the mangrove swamps to the highest woods.

ZOSTEROPS MAYOTTENSIS Schlegel.

Zosterops mayottensis Gadow, Cat. B. B. M. ix. p. 191.

Six males, four females, and one example of uncertain sex.

This White-eye is by far the most abundant bird on Mayotte, especially in the mangrove swamps, where I found it in large flocks. It is peculiar to the island.

CINNYRIS COQUERELI (Verr.).

Cinnyris coquereli Gadow, Cat. B. B. M. ix. p. 39.

Six males and three females.

A very common species on Mayotte, especially among the mangroves; it was in perfect plumage at the time of our visit. As the plumage of the female has not yet been described, I append a short account of it.

Adult ♀, Mayotte, 25 Feb. 1906.—Above dark greenish grey, rump paler, a faint green sheen on the crown of the head; chin, throat, and upper breast pale grey, each feather centred with black, rest of under-parts bright gamboge-yellow; under-tail-coverts greyer; under-wing-coverts white, axillaries pale lemon-yellow, quills black, wing-coverts with a bluish sheen; tail very deep blue, upper tail-coverts deep metallic green. Size slightly smaller than the male.

NESACANTHIS EMINENTISSIMA (Bp.).

Nesacanthis eminentissima Sharpe, Cat. B. B. M. xiii. p. 484.

This Weaver-bird is fairly abundant on Mayotte, both on the open fields and in the mangrove swamps.

FOUDIA MADAGASCARIENSIS (Linn.).

Very common and probably introduced.

CORVUS SCAPULATUS Daud.

Corvus scapulatus Sharpe, Cat. B. B. M. ii. p. 22.

An adult pair and one young male.

The black-and-white Crow was very common, especially on low-lying ground and in the cultivated fields.

CORYTHORNIS CRISTATA (Linn.).

Corythornis cristata Sharpe, Cat. B. B. M. xvii. p. 162.

Five males, two females, one example of uncertain sex.

Bill black; tarsi and toes pale red.

A very common species of Kingfisher, found chiefly amongst the mangroves, where several might be seen on one bush. I often watched the bird fishing close to me. I also met with one in a maize-field some little distance from the shore.

LEPTOSOMA DISCOLOR (Herm.).

Leptosoma discolor Sharpe, Cat. B. B. M. xvii. p. 1.

One adult male.

Tarsi and toes orange; bill dark brown, almost black.

I saw a pair of these birds on a tall tree in the middle of a mangrove swamp on Mayotte. Only two species belonging to this genus are known—the present one, and the somewhat doubtful *L. gracile* from Grand Comoro.

AGAPORNIS CANA (Gm.).

Agapornis cana, Salvadori, Cat. B. B. M. xx. p. 506.

Male and female.

Common and probably introduced from Madagascar.

MEROPS SUPERCILIOSUS Linn.

Merops superciliosus Sharpe, Cat. B. B. M. xvii. p. 70.

Three males and one female.

A very common bird on Mayotte, especially on the cleared portion of the island, where there are a few trees standing. Most of my specimens had light blue-green feathers scattered over the plumage of the upper parts. This species has a very wide range (E. and N.E. Africa, S.W. Africa, Madagascar, and the Comoros).

CYPSELUS MAYOTTENSIS.

Cypselus mayottensis Nicoll, Bull. B. O. C. xvi. p. 104.

One pair and one example of uncertain sex.

In Mayotte Harbour there are numerous little islets scattered about, and one of these, Buzi by name, we visited. Several Swifts were noticed flying about, and I managed to shoot three of them. To my surprise they appeared to belong to an undescribed species, which in colour approaches *C. sladenæ*, but is much smaller, especially as regards the wing. Moreover, my specimens are smaller than *C. barbatus*, which species they also approach somewhat in colour. The general tint of the upper parts is deep bluish green, the chin and throat are streaked with brown on a dirty grey ground, and the rectrices have a distinctly blue sheen or gloss.

TACHORNIS GRACILIS (Sharpe).

Tachornis gracilis Hartert, Cat. B. B. M. xvi. p. 464.

One female.

This little Swift was not numerous on Mayotte. I saw a few at the edge of the forest and others flying over the mangrove swamps. The flight of this species is very rapid, and it is therefore by no means easy to shoot. It has a wide range (W. Africa, E. Africa, and Madagascar).

FALCO SUBBUTEO Linn.

Falco subbuteo Sharpe, Cat. B. B. M. i. p. 395.

A perfectly adult male Hobby flew on board one evening when we were lying off Mayotte and was caught and brought to me.

ASTUR PUSILLUS Gurney.

Astur pusillus Gurney, Ibis, 1875, p. 959.

Male and female immature. Tarsi and toes yellow.

I saw only the female alive; the male was procured by the Doctor in a mangrove swamp. The female I shot from a tree in the wood that had grown up on what was formerly cleared land. This species is peculiar to the Comoro Islands.

MILVUS MIGRANS (Bodd.).

Adult female and immature male.

The Black Kite is very numerous about the harbour in Mayotte; several were often to be seen perched on the rigging of the yacht while at anchor there.

ARDEA BUBULCUS.

Bubulcus lucidus Sharpe, Cat. B. B. M. xxvi. p. 213.

Four adult males, one adult female.

The Buff-backed Heron was abundant on Mayotte at the time of our visit. I do not know whether it breeds in the Comoros, but should think that it is only a winter visitor.

BUTORIDES ATRICAPILLA (Afzel.).

Butorides atricapilla Sharpe, Cat. B. B. M. xxvi. p. 172.

One male and two females.

Iris yellow; bill black; a large yellow mark on the lower mandible from base to angle.

Fairly numerous in the mangrove swamps and very tame. As the tide ebbed numbers used to come from the swamps to the shore and feed in company with the Curlews, Whimbrels, &c.

ALECTRŒNAS SGANZINI (Des Murs).

Alectrœnas sganzini Salvadori, Cat. B. B. M. xxi. p. 162.

Iris hazel; bill greenish, with a white line on the lower mandible; tarsi and toes greenish.

This fine Pigeon is now found only among the highest peaks of the hills, where the native vegetation is untouched, nearly the whole of the island having been cleared at some time or another. I saw very few examples, and obtained only two adult males.

The note of this Pigeon is a very deep "coo."

TURTUR DAMARENSIS Finsch & Hartl.

Streptopelia damarensis Salvadori, Cat. B. B. M. xxi. p. 427.

One adult male and two adult females.

This was the only Dove met with on Mayotte, where it is very abundant. I did not observe *Turtur* (*Homopelia*) *comorensis*.

ÆGIALITIS PALLIDA (Strickl.).

Ægialitis pallida Sharpe, Cat. B. B. M. xxiv. p. 284.

Numerous in flocks. One immature female was obtained.

DROMAS ARDEOLA, Paykull.

Dromas ardeola Sharpe, Cat. B. B. M. xxiv. p. 28.

One pair of adults, one male and two females immature.

Bill black; tarsi and toes greenish grey, webs nearly black.

This curious bird was noticed in flocks of from twelve to thirty individuals along the shore. At a distance they much resemble Avocets, and are, I should say, true Waders, at least in their habits.

NUMENIUS PHÆOPUS (Linn.).

Numenius phæopus Sharpe, Cat. B. B. M. xxiv. p. 355.

The only example of the Whimbrel obtained was in full moult—quills as well as body-feathers (Feb. 25th). These birds were very abundant at the time of our visit, and were seen in pairs in the mangroves and along the shore at low tide.

—NUMENIUS ARQUATA (Linn.).

Numenius arquata Sharpe, Cat. B. B. M. xxiv. p. 341.

A great many Curlews were to be found on the shore and in the mangrove swamps of Mayotte. At high tide they, in company with the Whimbrels, were to be seen perching on the mangrove trees in flocks.

TRINGOIDES HYPOLEUCUS (Linn.).

Very common on Mayotte in February.

STERNA CANTIACA, Gm.

Sterna cantiaca, Saunders, Cat. B. B. M. xxv. p. 75.

One adult male.

The Sandwich Tern was met with in small numbers, in company with *Sterna media,* on the edge of the mangrove swamps.

STERNA MEDIA Horsf.

Sterna media Saunders, Cat. B. B. M. xxv. p. 86.

Two adult males.

This was the commonest Tern on Mayotte.

From Mayotte we steamed to Diego Suarez, Madagascar, where we remained from March 4th to March 9th. We made a two days' excursion to the Forêt d'Ambre, the largest forest in Madagascar, which extends for six hundred miles and swarms with birds, though, owing to the extraordinary density of the vegetation, it is exceedingly difficult to find them when shot.

The Governor of Diego Suarez most kindly placed a special train (drawn by mules) at our disposal. The distance to the forest was about thirty-six miles, all up hill.

I collected examples of the following twelve species in Madagascar. We saw many interesting birds besides, which we were unable to get—Black Parrots (*Coracopsis vasa*), Pigeons (*Alectrœnas madagascariensis*), &c.; and coming back in the train we observed several Guinea-fowls (*Numida*) and a Madagascar Cat.

ZOSTEROPS MADAGASCARIENSIS Gm.

Zosterops madagascariensis Gadow, Cat. B. B. M. ix. p. 170.

One adult male.

I saw a number of Madagascar White-eyes in the forest, but was unable to obtain more than one specimen. They kept to the tall trees, and were not easy to see amongst the leaves.

CISTICOLA CHERINA Smith.

Cisticola cherina Sharpe, Cat. B. B. M. vii. p. 264.

One male and two females, adult.

The Madagascar Grass-Warbler is extremely abundant in the fields of long grass on the sides of the railway-track.

BERNIERIA MADAGASCARIENSIS (Gm.).

Bernieria madagascariensis Sharpe, Cat. B. B. M. vii. p. 529.

One adult male and one immature male.

I met with several examples of this species in the Forêt d'Ambre. It utters a distinct "churr" like that of a Reed-Warbler, but much louder, and seems to keep to the thick undergrowth.

CALICALICUS MADAGASCARIENSIS (Linn.).

One adult male.

I saw several of these birds in the Forêt d'Ambre, but owing to the very thick undergrowth I was only able to obtain one specimen.

MOTACILLA FLAVIVENTRIS Verr.

Motacilla flaviventris Sharpe, Cat. B. B. M. x. p. 496.

An adult pair.

This splendid Wagtail was met with only once. I obtained my pair on some cultivated ground not far from the Forêt d'Ambre. One of them was seen perching on the roof of a house.

EROESSA TENELLA Hartl.

Eroessa tenella Sharpe, Cat. B. B. M. vii. p. 151.

Two immature males were seen and procured.

MIRAFRA HOVA Hartl.

Mirafra hova Sharpe, Cat. B. B. M. xiii. p. 601.

Three adult females and one example of uncertain sex.

This little Lark is extremely common along the railway-track up to the forest. The birds rose in twos and threes all round the train.

FOUDIA MADAGASCARIENSIS (Linn.).

One adult male.

A very abundant bird on the cultivated patches near the forest.

Astur franciscæ (Smith).

Astur franciscæ Sharpe, Cat. B. B. M. i. p. 116.

One immature male.

Tarsi and toes yellow; iris yellow, cere yellowish.

I only met with the example obtained. It was in a wooded ravine about a mile from the forest.

This Hawk is peculiar to Madagascar.

Dicrurus forficatus (Linn.).

Edolius forficatus Sharpe, Cat. B. B. M. iii. p. 254.

One male, scarcely adult.

The example obtained was the only one of this species that I met with. It was sitting in a tree on the outskirts of the Forêt d'Ambre.

Centropus toulou (P. L. S. Müll.).

Centropus toulou Shelley, Cat. B. B. M. xix. p. 350.

One adult male.

Iris dark reddish-brown; bill, tarsi, and toes black.

I saw several Lark-heeled Cuckoos near the forest in Madagascar. They were extremely tame.

This species is peculiar to Madagascar.

Caprimulgus madagascariensis Sganz.

Caprimulgus madagascariensis Hartert, Cat. B. B. M. xvi. p. 535.

One adult male.

I met with only one example of this species in Madagascar; it was sitting on a stone close to the sea.

We left Diego Suarez on the afternoon of March 9th, and sighted Glorioso at 7 o'clock the next morning.

Glorioso, or Ile Glorieuse, belongs to France, and is rented by a Frenchman for the purpose of growing cocoanuts for copra. It comprises, besides the main island, which is from a mile and a half to two miles long and about a mile broad, the Ile de Lise, a small, thickly-wooded islet about three miles away, with very shallow water between. Moreover, between these two islands is a third, which is little more than a large rock covered with grass, on which thousands of Noddies (*Anous stolidus*) were nesting, as well as one or two pairs of Boobies (*Sula leucogastra*).

Except for the cocoanut trees and a large maize-field, Glorioso is covered with a thick growth of trees and scrub. It is a low coral island covered with a deep layer of sand; in places on the leeward side this sand has drifted and formed a fairly high ridge.

The land-birds are represented by five resident species and one migrant, the Black Kite (*Milvus migrans*). All these are on the main island. We spent one day on Ile de Lise, but saw no birds there of any kind, though, judging from the appearance of the ground and the dried remains of Sooty Terns, I should say that it is a large breeding-station of this species during certain seasons. Ile de Lise is even more thickly-wooded than the main island, and the heat in both is very intense. The Cocoanut Crab (*Birgus latro*) is plentiful upon Ile de Lise, though not found on Glorioso.

On the main island the common fowl runs wild, and we saw many familiar "barn-door" varieties of it.

These islands—Glorioso, Assumption, and Aldabra—have seldom been visited by naturalists. Dr. W. L. Abbott, an American, explored them about sixteen years ago, and an account of his collections is to be found in the 'Proceedings of the U.S. Nat. Museum,' vol. xviii. (Ridgway). Dr. Coppinger also visited Glorioso in H.M.S. 'Alert,' when he discovered a new Dove, *Turtur coppingeri*.

Although special search was made, and we went over nearly if not quite the whole of the island, we failed to find any trace of a Dove, although Dr. Abbott got one specimen (*cf.* Ridgw. Proc. U.S. Nat. Mus. vol. xviii. p. 526).

Two most interesting days were spent on Glorioso, where I made a collection of birds, referable to six species:—

Ixocincla madagascariensis (P. L. S. Müll.).

Ixocincla madagascariensis Sharpe, Cat. B. B. M. vi. p. 45.

Ixocincla madagascariensis rostrata Ridgway, Proc. U.S. Nat. Mus. xviii. p. 525.

One adult female.

Iris brown; bill orange; tarsi and toes brown.

My example from Glorioso was not in good plumage but in moult; however, I cannot see the slightest difference between it and a series from Mayotte and Madagascar.

I met with only four of these birds, and was unable to obtain more than the one example. I certainly did not notice any difference in the note from that of the Mayotte bird.

ZOSTEROPS MADAGASCARIENSIS (Gm.).

Zosterops madagascariensis Gadow, Cat. B. B. M. ix. p. 170.

Zosterops madagascariensis gloriosa Ridgway, Proc. U. S. Nat. Mus. xviii. p. 526.

Five adult males, two immature females.

The Madagascar White-eye is the most abundant land-bird on Glorioso. I have carefully compared my seven specimens with a series of *Z. madagascariensis* in the British Museum, and I cannot find the slightest difference between them. Ridgway says that he separates the Glorioso bird with hesitation, as he has only one Madagascar bird for comparison, but thinks that the upper parts are "less vivid" in the Glorioso bird, and that the yellow on the under tail-coverts is brighter, but my series does not bear this out. The two so-called forms are absolutely indistinguishable. As soon as we landed on the island I saw this bird, and near the settlement I found it in numbers along with the Sun-bird.

CINNYRIS SOUIMANGA (Gm.).

Cinnyris suimanga Ridgway, Proc. U.S. Nat. Mus. xviii. p. 526; Nicoll, Bull. B. O. C. xvi. p. 106.

Two males.

Tarsi and toes black.

At the time of our visit this Sun-bird was not in its full beauty. It seems to keep almost entirely to the cocoanut trees. It is not peculiar to the island, being also found in Madagascar.

CORVUS SCAPULATUS Daudin.

Corvus scapulatus Ridgw. Proc. U.S. Nat. Mus. xviii. p. 337.

Several black-and-white Crows were seen by members of our party on Glorioso. I observed a pair, but was unable to obtain a specimen. I was told that they were resident on the island.

TURTUR COPPINGERI Sharpe.

Turtur coppingeri Salvadori, Cat. B. B. M. xx. p. 412.

Turtur copperingi Ridgway, Proc. U.S. Nat. Mus. xviii. p. 525 (Glorioso).

Although three of us went in different directions on the island and walked the whole day, no Doves of any kind were seen. Dr. Abbott obtained one example. It is possible that this species is very scarce on the island, and if this be the case it might be overlooked owing to the thickness of the vegetation, as the Doves on Assumption and Aldabra are very tame and usually keep to the thick scrub, where they run about under the bushes, whence it takes a great deal of beating to drive them out. It would seem that this is the only peculiar species on Glorioso.

DROMAS ARDEOLA Paykull.

Dromas ardeola Ridgway, Proc. U.S. Nat. Mus. xviii. p. 527 (Aldabra, Glorioso, Seychelles).

A flock of Crab-Plovers was seen on the shore in company with some Whimbrels (*Numenius phæopus*).

STERNA CANTIACA Gm. = bergii (Ibis 1036: 45),

Sterna cantiaca Saunders, Cat. B. B. M. xxv. p. 75.

One adult female.

Iris black; bill chrome-yellow; tarsi and toes black, soles mottled with yellow.

Lord Crawford obtained the only example of the Sandwich Tern met with on Glorioso. It has not been recorded from the island before.

—Sula piscator (Linn.).

Sula piscator Ridgway, Proc. U.S. Nat. Mus. xviii. p. 524 (Glorioso).

Sula piscatrix, Grant, Cat. B. B. M. xxvi. p. 432.

One adult male (brown phase), one immature female.

Iris dark brown; bill lavender, base of both mandibles red; round the eye bluish, sac jet-black; tarsi and toes cherry-red.

This Gannet offers one of the most complex problems that I have ever met with in birds. In Little Cayman Island, W. I., we find a Gannet which is doubtless *Sula piscator*, yet having a stage in which the rump, tail, and vent are white, while the rest of the plumage is brown. In that place, however, examples are always to be found in transition from such plumage to the white plumage of the really adult bird; although the brown birds with white tails, &c., breed in that plumage and have *black* gular sacs, a sign of maturity (*cf.* Ibis, 1904, pp. 588–589).

On Glorioso we find a somewhat similar state of things, though in this case nearly the whole of the Gannets on the island are in the brown plumage, with white tails, vents, &c., and, what is more remarkable still, they apparently, instead of getting lighter brown and then white, as might be expected, become darker greyish brown as they get older. The first plumage is similar to, though slightly darker than, that of the same aged *Sula piscator* from other parts of the world; but when they assume the "white-tailed plumage," the rest of the body, &c., is quite a shade darker. To the best of my belief, I did not see a single speckled Gannet on the island of Glorioso, though on the neighbouring islands, Assumption and Aldabra, speckled birds, *i. e.* birds moulting straight from the brown-tailed plumage into white plumage, are the rule. On Glorioso at least ninety per cent. of the Gannets are brown-plumaged birds with white tails, and this, coupled with the fact that they are darker in colour, almost decided me to describe them as of a distinct species. But knowing, as I did from experience, that the Cayman Gannets have a similar plumage, although they moult from that into the white plumage, I do not think that there are sufficient grounds for separating them.

Is the Glorioso bird passing by evolution from a white to a constant dark form? If so, why? It cannot be a case of isolation, as Glorioso is not much more than fifty miles from Assumption, where the Gannets are all white or speckled birds, moulting to white, and *Sula piscator* is one of the most active and quick-flying Gannets that exists. The climate is the same at Glorioso as at Assumption, and the food is probably the same.

I give below a short description of the plumages of my specimens:—

♀ *imm.*, Glorioso, March 10th.—Slightly darker than that of young examples from the Atlantic (S. Trinidad) and slightly greyer; new feathers on back slaty-grey; old feathers on neck much worn and tipped with golden straw-colour, new feathers slaty-grey with *no gold* tips; tail dark brown.

This is evidently a bird going through its first moult.

♂ *breeding*, Glorioso, March 10th.—Darker grey than the young bird; new feathers appearing dark slaty-grey, old feathers on neck tipped with golden colour; no gold colour on new grey feathers of neck. Tail, lower back, rump, vent, and under and upper tail-coverts white.

FREGATA AQUILA (Linn.).

Fregata aquila minor Ridgway, Proc. U.S. Nat. Mus. xviii. p. 525 (Glorioso).

Fregata aquila Grant, Cat. B. B. M. xvi. p. 443.

Bill, iris, tarsi, and toes black; pouch brilliant brick-red.

The Large Frigate-bird is subject to much variation in size in different parts of the tropical Atlantic, Pacific, and Indian Oceans, especially as regards the dimensions of the bill. I can, however, see no other difference, and therefore prefer to use the name *F. aquila* for the examples from Glorioso.

At the time of our visit these birds were breeding in numbers in the tallest trees on the island. Many were sitting on their nests and on the tree-tops with their scarlet pouches extended, some were flying about with extended pouches, while others were in the air with the pouch collapsed. In this case the collapsed pouch swings to and fro, hanging down some inches from the bird's chin. I made one example into a skin and the others, which were especially procured by Lord Crawford for the purpose of ascertaining how the pouch is extended, were brought home in spirits. They have been examined by Mr. Pycraft, who will shortly publish a description of the anatomy of this curious ornament of the breeding-season.

On reference to my journal I find the following extract:—

"I notice that the female Frigate-birds have a curious method of display when flying; they frequently close one wing and plunge downwards towards the ground. The males may do likewise, but I never saw them do so."

The note of these birds is a curious bubbling laugh on a descending scale, and can be heard for some distance.

On the evening of March 11th we left Glorioso for Assumption, which we reached about 9 o'clock the next morning.

Assumption is a low coral island about two miles in length and perhaps a mile wide. As we slowly steamed up to it Gannets (*Sula piscator* and *S. cyanops*) came out to meet us, accompanied by *Fregata aquila* and *Anous stolidus*. Several individuals of *Sula piscator* perched in the rigging. The weather was perfect and the sea like glass. Numbers of green turtles of large size were seen along the shore. We at once rowed ashore and landed on the sandy beach. Assumption is composed entirely of coral of an ancient formation and of a brown colour. At one end of the island are several *Casuarina* trees, *Hibiscus* and other bushes grow from the cracks in the coral, and several fairly large trees with large glossy leaves are scattered about amongst the scrub. There was a little fresh water at the time of our visit, but this consisted entirely of rain-water collected in holes and depressions in the coral. That this water is a constant supply, however, is proved by the abundance of land-birds on the island. At one end there is a hill sixty feet in height, made of drifted sand. Upon landing and entering the scrub, the first thing that we noticed was the curious squealing and grunting of the Rails (*Rallus abbotti*), which put us in mind of a sty full of pigs.

CINNYRIS ABBOTTI Ridgw.

Cinnyris abbotti Ridgway, Proc. U.S. Nat. Mus. xviii. p. 523; Nicoll, Bull. B. O. C. xvi. p. 106.

Five adult males, one adult female.

Abbott's Sun-bird is the only small land-bird at present known from Assumption*, but it is very abundant. Two of the males obtained are in good plumage. The sooty-black under parts, from the red collar to the vent, are the characters which distinguish this species from *Cinnyris aldabrensis*.

CORVUS SCAPULATUS Daudin.

Corvus scapulatus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 523.

One male, perhaps adult.

Iris, bill, tarsi, and toes black.

We met with a few Crows on Assumption, where they breed. I examined several nests, all of which were empty. They were typical Crows' nests built at the tops of the tallest trees on the island. Unlike most of the birds on Assumption, this species is extremely wild.

TURTUR ASSUMPTIONIS.

Turtur aldabranus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 522.

Turtur assumptionis Nicoll, Bull. B. O. C. xvi. p. 105.

Two pairs of adult birds.

Bill greyish brown; tarsi and toes red; iris reddish orange.

Dr. Abbott saw this Dove on Assumption, but he procured no examples of it, and Mr. Ridgway, in his paper on Dr. Abbott's collection, has mentioned it as *T. aldabranus*. I found our four specimens to differ very decidedly from *T. aldabranus*. The upper parts are much darker (adult males), the head and neck are slightly darker, as are also the under parts; the dark centres to the feathers of the "collar" are much larger in this new species, and the under-wing-coverts are dark slaty, and not chestnut as in *T. aldabranus.*

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* I feel certain that I got specimens of every resident land-bird on Assumption, and that there is no *Zosterops* there.—M. J. N.

We now know of four Doves from these coral islands to the N.W. of Madagascar—*Turtur saturatus* from the Amirantes, *T. coppingeri* from Glorioso, *T. aldabranus* from Aldabra, and the present species from Assumption. There are still two islands of this group which have never been visited by a naturalist, *i. e.* Cosmoledo and Astone, and it is highly probable that they also may have their peculiar Doves.

The Assumption Dove appeared to be quite common and is extraordinarily tame. We found one nest built in a low bush and containing a newly hatched chick; the old bird was nearly caught on the nest. The flight of this species is rather heavy and not so buoyant as that of most Turtle-Doves: it was usually found under the thick bushes and scrub.

CENTROPUS ASSUMPTIONIS.

Centropus insularis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 522.

Centropus assumptionis Nicoll, Bull. B. O. C. xvi. p. 105.

Two adult males and two eggs.

Bill, tarsi, and toes black.

A common though rather retiring bird, found breeding at the time of our visit. One nest contained two eggs and was a large domed structure made of dry grass, placed high up in a bush. The bird sits with its long tail over its head, inside the nest. I only saw the male sitting; in fact I did not see a female at all on Assumption. This species is very tame, and I almost caught one individual alive with a noose on the end of a stick. It utters a long bubbling note which is audible at some distance. It differs from *C. insularis* in being much smaller, and darker on the wings and mantle.

RALLUS ABBOTTI Ridgw.

Dryolimnas abbotti Ridgway, Proc. U.S. Nat. Mus. xviii. p. 520.

Rallus abbotti Nicoll, Bull. B. O. C. xvi. p. 106.

Three adult males, one adult female, one immature male.

Iris reddish hazel; bill red at base, brown at tip; tarsi and toes dark brown.

Abbott's Rail is one of the most abundant birds on Assumption, and at once makes its presence known by a curious note which much resembles that of our Water-Rail (*R. aquaticus*). When uttering this note, it puffs its feathers out and looks almost twice its natural size, then gradually collapsing, as it were. The nesting-season was apparently over when we were on the island, though I saw several young birds covered with *black* down like young Water-hens. This species, like most other Rails, appears to shed all its wing-quills at once and to be then flightless; at other times it can, I believe, fly, although I never saw a wild bird do so.

It was extraordinarily tame, and would feed unconcernedly while we were beating out the bushes within a few inches of it. We obtained an adult and an immature bird alive; they throve wonderfully on raw meat, fish, and bread-crumbs, and may now be seen in the Zoological Gardens.

As I believe that the plumage of the immature bird has not previously been described, I append a short description of an immature male obtained on March 13th, 1906:—

Upper parts olive-brown, feathers of mantle centred with black, crown of head uniform brownish; chin, centre of throat, and neck white; lower neck and breast pale reddish brown; abdomen faintly barred with buff; under-tail-coverts darker red; under-wing-coverts and axillaries black, broadly bordered and tipped with white.

—ARDEA CINEREA Linn.

Ardea cinerea Ridgway, Proc. U.S. Nat. Mus. xviii. p. 530 (Aldabra).

One immature female.

I saw several of these Herons on Assumption and others on Aldabra, but unfortunately was unable to obtain more than one example. From its large size, however, I am nearly sure that it is of a different species from our Common Heron, but until I can examine more examples it is impossible to separate it on the strength of one immature specimen.

DEMIEGRETTA SACRA (Gm.).

Demiegretta gularis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 530 (Aldabra).

Demiegretta sacra Sharpe, Cat. B. B. M. xxvi. p. 136.

Adult male (blue phase); adult male (white phase).

Bare skin of face and iris yellow; bill black; tarsi black, feet yellow.

I saw several of these beautiful Reef-Herons at Assumption. They were quite tame, but I do not know whether they breed there.

BUTORIDES CRAWFORDI. (Plate XXI.)

Butorides crawfordi Nicoll, Bull. B. O. C. xvi. p. 105.

I shot one specimen of this new species (an adult male) as we were rowing ashore the first day. I afterwards saw several other examples, but, unlike members of this genus generally, they were extremely shy and would not allow of approach within gunshot.

This species is very distinct from *B. atricapilla*; the crown of the head is distinctly bluish instead of green; the wing-coverts are edged with white, and the whole of the lower surface, including the under-wing-coverts, is pure milky white instead of dusky grey as in *B. atricapilla*. The neck is entirely unspotted with red, and a single line of faint dusky spots extends from the chin down the centre of the throat. The bill is also shorter, thicker, and slightly decurved.

Dr. Abbott did not meet with a *Butorides* on Assumption, but it seems from Ridgway's account (Proc. U.S. Nat. Mus. xviii.) that he did not make a long stay on the island.

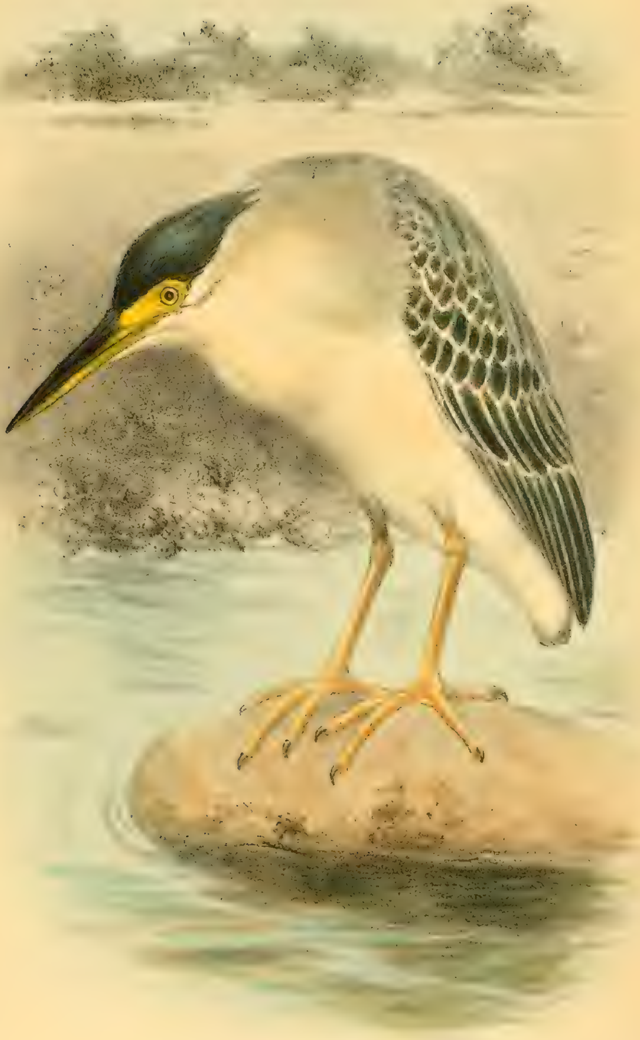
GYGIS ALBA (Sparrm.).

Gygis alba Ridgway, Proc. U.S. Nat. Mus. xviii. p. 520.

Gygis candida Saunders, Cat. B. B. M. xxv. p. 149.

One adult male. Bill hyacinth-blue at base, rest black; iris black; tarsi and toes pale blue, webs milky white.

I saw several of these White Terns on Assumption, but



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found no nests, although I fancy that they were breeding at the time of our visit. Dr. Abbott obtained no specimen of this bird on Assumption.

—SULA PISCATOR (Linn.).

Sula piscator Ridgway, Proc. U.S. Nat. Mus. xviii. p. 520.

Two immature females.

One of these specimens is in the first brown plumage, the other is speckled over with white. This Gannet is common on Assumption. All the nests contained young, one of which I took and reared: it is now in the Zoological Gardens.

—SULA CYANOPS (Sundev.).

Sula cyanops Ridgway, Proc. U.S. Nat. Mus. xviii. p. 520 (Assumption); Grant, Cat. B. B. M. xxvi. p. 432.

One adult female, two young males, and one young female.

Bill yellow in the adult.

Several young Black-tailed Gannets were seen flying round the ship while we were lying off the island, and three were shot. The adults were not seen until the second morning, when we found them sitting on the sand-hill at the windward side of the island. They were very tame and easily caught by the hand. I saw no signs of *Sula abbotti* Ridgway.

There is an adult Gannet in the British Museum procured by Dr. Andrews on Christmas Island, which I believe to be *Sula abbotti*. Dr. Abbott says that "a few breed on Assumption, but are not found on any other island in these seas." *Sula abbotti* was certainly not to be seen when we were there, and as it is a most striking-looking bird it is not likely to have been overlooked.

—PHAETHON RUBRICAUDA Bodd.

Phaeton rubricaudus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 522.

Phaethon rubricauda Grant, Cat. B. B. M. xxvi. p. 451.

One adult male. Bill bright coral-red.

Several of these Tropic Birds were seen flying high over the island, and one, the finest individual of this species that I have ever seen, was caught on the ground by one of the crew. It is of a bright salmon-pink all over, far brighter than any which I met with in the South Pacific in 1902–3.

At mid-day on March 13th we left Assumption, and very shortly afterwards sighted Aldabra. We were all much struck by its size, and later on found what a really enormous atoll it is. Judging by the size of the lagoon enclosed by the island, or rather two islands, which are separated by a narrow channel, Aldabra must be quite one hundred miles in circumference. We were unable to anchor in the place marked on the chart owing to the current, so "stood off and on" until the next morning, when a boat came off to us and took us to a good anchorage outside the reef. Three delightful days were spent on Aldabra, but owing to the size of the island and the difficulty of getting about from one part to another, the time was too short to procure examples of all the land-birds found there. I, however, made a collection of the following seventeen species.

IXOCINCLA ROSTRATA Ridgw.

Ixocincla madagascariensis rostrata Ridgway, Proc. U.S. Nat. Mus. xviii. p. 535.

One adult male, two adult females.

Iris hazel; bill orange; tarsi and toes brownish flesh-coloured.

This bird is abundant all over the island. The examples which I obtained were in very worn plumage and are so ragged that it is impossible to say what colour the plumage is. I cannot see any difference between the bill of this species and that of *I. madagascariensis*, but as my birds are so worn I have followed Mr. Ridgway in calling it a distinct species.

ZOSTEROPS ALDABRENSIS Ridgw.

Zosterops aldabrensis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 537 (Aldabra).

One adult male.

The Aldabran White-eye is not a very abundant bird on the island. It is extremely restless and active. In general coloration it somewhat resembles *Z. madagascariensis*, but is much smaller and paler and has a yellowish forehead; the breast and abdomen are almost pure white.

CINNYRIS ALDABRENSIS Ridgw.

Cinnyris aldabrensis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 536; Nicoll, Bull. B. O. C. xvi. p. 106.

Three adult males and one adult female.

Bill, tarsi, and toes black.

The Aldabran Sun-bird is very common on the island. This species differs from *C. abbotti* of Assumption chiefly in having only a band of sooty-black across the breast below the maroon breast-band, while the abdomen is yellowish green. It seemed to be particularly fond of the Casuarina-trees, and was met with chiefly in pairs at the time of our visit, when the males were in full plumage.

DICRURUS ALDABRANUS (Ridgw.).

Buchanga aldabrana Ridgway, Proc. U.S. Nat. Mus. xviii. p. 537; Nicoll, Bull. B. O. C. xvi. p. 106.

One adult female.

Bill, tarsi, and toes black.

Although this bird is fairly numerous near the Settlement, I was unable to obtain more than one example. The males were exceedingly shy and wild; the individual obtained was, however, exactly the reverse; it was the only female seen.

NESACANTHIS ALDABRANUS (Ridgw.).

Foudia aldabrana Ridgway, Proc. U.S. Nat. Mus. xviii. p. 538.

Four adult males and one adult female.

Iris black; bill black; tarsi and toes yellowish brown.

The Aldabran Weaver-bird is the most abundant land-bird near the Settlement, where it seems to take the place of the English Sparrow, flocking round the houses to pick up crumbs, &c. At the time of our visit it was just beginning to nest in the Casuarina-trees, and the males were in perfect plumage.

CUCULUS CANORUS?

I saw a Cuckoo, which I believe to have been of this species, on Aldabra, but I was not able to get it.

CENTROPUS INSULARIS Ridgw.

Centropus insularis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 522 (Aldabra).

Bill, tarsi, and toes black.

I obtained an adult female and a barred young female of this species on Aldabra; it is larger than *C. assumptionis*, especially as regards the bill and tail, and is lighter maroon on the wings. I did not see many individuals of this bird on Aldabra, but it is doubtless more numerous than I imagined at the time, as it is easily overlooked, especially on such a large island, and is very retiring in its habits, though by no means shy.

CORVUS SCAPULATUS Daudin.

Corvus scapulatus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 537.

One immature male.

This Crow is not common on Aldabra; I met with it only in one place, near some Casuarina-trees on the shore.

ALECTRŒNAS MINOR Berl.

Alectrœnas sganzini Ridgway, Proc. U.S. Nat. Mus. xviii. p. 532 (Aldabra).

Alectrœnas minor Berl. Abh. Senck. nat. Ges. 1898, p. 493 (Aldabra); Sharpe, Hand-l. Birds, vol. i. p. 62.

Two adult females, one female scarcely adult, and one immature pair.

The Aldabran "Fruit-Pigeon" is apparently not an abundant species. I saw one near the Settlement, and a few on the further side of the lagoon about thirty miles off; in the latter place they frequented a clump of tall trees close to the Ibis-colony. This bird, unlike the members of the genus met with elsewhere, was very shy, and I had some difficulty in obtaining adult specimens. The young were in moult from the nesting to the adult plumage. In the first plumage they are green above, every feather being edged with golden yellow and the quills broadly so; the under-parts are greenish grey. In my examples the blue adult feathers of the back and the grey neck plume-like feathers are appearing in a scattered manner. Ridgway, on the birds collected by Abbott, says of this species: "Similar or identical with that of Madagascar"; but the Madagascar bird is totally different in colour, being vinous red. Mr. Ridgway evidently means, with that of the Comoros, *A. sganzini*. *A. minor*, however, is *decidedly smaller*, but in other respects does not seem to differ from *A. sganzini*.

In the same paper we read, "They are extremely tame and stupid and can almost be caught in the hand" (Abbott, MS.). Probably Abbott was at Aldabra when this bird was not nesting, or rather when it had not got young, as I found it impossible to get any adults except by sitting very quietly under the above-mentioned trees.

TURTUR ALDABRANUS Sclater.

Turtur aldabranus Salvadori, Cat. B. B. M. xxi. p. 411.

Turtur aldabranus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 532.

One adult male and one immature female.

I saw very few of these Doves on Aldabra, though possibly they are more abundant on parts of the island which I did not visit. Their habits are similar to those of *T. assumptionis*.

TINNUNCULUS NEWTONI Gurney.

Cerchneis newtoni Sharpe, Cat. B. B. M. vol. i. p. 433.

Tinnunculus newtoni Ridgway, Proc. U.S. Nat. Mus. xviii. p. 533.

Falco newtoni Nicoll, Bull. B. O. C. xvi. p. 106.

One immature female. Iris *yellow*; tarsi and toes yellow, claws black.

This little Kestrel is by no means common on Aldabra. I saw two or three near the Settlement in some Casuarina-trees and two more near the Ibis colony. The only example obtained is unfortunately a young bird, and had a yellow iris, which is unusual for a Kestrel: but, apart from this, I think it quite probable that this species is different from that of Madagascar, as nearly all, if not quite all, the resident birds on Aldabra are peculiar, including the Ibis, *Ibis abbotti*.

RALLUS ALDABRANUS Günth.

Dryolimnas aldabranus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 528; Nicoll, Bull. B. O. C. xvi. p. 106.

One adult female; one immature male. Iris hazel; bill dark red at base, culmen and tip dark brown; tarsi and toes brown.

The Aldabran Rail differs from that of Assumption in having an olive wash on the crown of the head, and in being faintly and less broadly barred below. The immature bird, judging from our single specimen, differs from that of Assumption (*R. abbotti*) in having the white patch on the throat suffused with reddish chestnut.

This Rail is not nearly so abundant on Aldabra as *R. abbotti* is on Assumption, and I met with only two examples. Mr. Meade-Waldo saw two near the Settlement. The types of this species are in the British Museum.

IBIS ABBOTTI Ridgw.

Ibis abbotti Ridgway, Proc. U.S. Nat. Mus. xviii. p. 530; Nicoll, Bull. B. O. C. xvi. p. 106.

Two adult females and one immature male.

Adult female: iris light blue; bill black; tarsi and toes black with a reddish tinge. Skin on the under-side of the wings blood-red.

Abbott's Ibis is to my mind one of the most interesting birds on Aldabra, and the thanks of all ornithologists are due to the Hon. Walter Rothschild for the steps he has taken to preserve this fine and rare species.

I have seen many tame and confiding birds in different parts of the world, but never such a delightfully tame bird as this Ibis. It appears to nest only in one portion of the Island of Aldabra, some thirty miles from the Settlement, but the breeding-season was past at the time of our visit, and the young were full-grown, though they still had the head and neck covered with feathers. As they appeared to be very tame, I set my camera to photograph a group of them, when they immediately walked up to me and began to inspect the legs of the camera. I drove them off to the spot where I intended to "group" them, but they immediately returned, and we found that they would allow themselves to be picked up and examined, and when put down again remained quite still.

The feathers of the head and neck of the young birds are white with a few dark streaks, but not nearly so much streaked as the corresponding feathers of *Ibis æthiopica.* We saw altogether about thirty individuals, but it is quite probable that there are colonies elsewhere on the island.

This species differs from *Ibis bernieri* of Madagascar in the following particulars:—

Lower neck naked and minutely papillose; remiges without dark-coloured tips; decomposed tertials greenish blue on outer, greyish green on inner webs; and iris light blue instead of white (Ridgway). These characters are borne out in my examples, especially as regards the bare lower neck and the pale blue iris.

DROMAS ARDEOLA Paykull.

Dromas ardeola Ridgway, Proc. U.S. Nat. Mus. xviii. p. 527.

This is the most abundant Wader on Aldabra; it does not breed there, but during our visit I saw enormous flocks along the shore, whence as the tide rose they flew over into the lagoon.

We did not see any Flamingoes on Aldabra. Abbott says that *Phœnicopterus erythræus* (?) "doubtless breeds on Aldabra"; but I was told by the natives that such is not the case.

—SQUATAROLA HELVETICA Linn.

Squatarola helvetica Sharpe, Cat. B. B. M. xxiv. p. 182.

One adult female.

The Grey Plover appears to be a common winter visitor to Aldabra. The example obtained is assuming its breeding-plumage by a *moult.*

—TRINGA SUBARQUATA Güldenst.

Ancylochilus subarquatus Sharpe, Cat. B. B. M. xxiv. p. 164.

Tringa ferruginea Ridgway, Proc. U.S. Nat. Mus. xviii. p. 527.

Adult female.

Several Curlew Sandpipers were met with in company with Sanderlings, Turnstones, &c. The example obtained was just assuming the breeding-plumage *by moult*, but the new feathers on the mantle are *black* with no sign of any rufous on them. This colour on these feathers must therefore be due to an infusion of colouring pigment or some other form of *colour-change*, as it is not possible that the breeding-plumage could be assumed by a *double moult*. It seems to me that at present we know scarcely anything certain about the changes of plumage of birds.

DEMIEGRETTA SACRA (Gm.).

Demiegretta gularis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 530 (Aldabra).

Demiegretta sacra Sharpe, Cat. B. B. M. xxvi. p. 137.

One female.

This Heron is extremely abundant on Aldabra and is very tame. The example obtained is in very curious plumage, nearly every feather being half blue and half white longitudinally. As these Herons are very partial to the shallow wells or pools of fresh water in the coral near the Settlement, all these reservoirs have to be covered with dead bushes to prevent the birds from fouling them.

STERNA MELANAUCHEN Temm.

Sterna melanauchen Saunders, Cat. B. B. M. xxv. p. 126; Ridgway, Proc. U.S. Nat. Mus. xviii. p. 526.

One adult female.

I saw several of these beautiful Terns in the lagoon at Aldabra.

SULA PISCATOR (Linn.).

Sula piscator Ridgway, Proc. U.S. Nat. Mus. xviii. p. 531.

This Gannet is abundant at Aldabra. I did not see any of the "white-tailed" phase.

On the evening of March 16th we left Aldabra for Cosmoledo, whence Lord Crawford intended to visit Astone. These two islands are said to have many land-birds and have not yet been visited by a naturalist.

During the night of March 11th, however, we were carried twenty miles out of our course by a current, and ran ashore on Assumption, fortunately on the "leeward" side of the island. There we remained fast for twenty-four hours, finally getting off without any damage. After this, however, it was necessary to go to some port, and on March 22nd we anchored at Mahé, in the Seychelles. We stayed at the Seychelles Islands until May 8th, and landed on the Islands of Praslin and Felicité. Lord Crawford intended to visit most of the islands of this group, but owing to the very bad weather his plan had to be abandoned. During our stay at Mahé, Mr. Hans Thomasset rendered us great help in collecting, and gave us every assistance; and Mr. Meade-Waldo and I passed a most enjoyable time at his house "Cascade Estate," where I obtained the following birds, one of which I have since described as new.

IXOCINCLA CRASSIROSTRIS (E. Newton).

Ixocincla crassirostris Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

Two adult males, one adult female, one immature female.

Iris hazel; bill orange; tarsi and toes brown.

This bird is very abundant on Mahé and is probably the commonest species in the Seychelles. I have never met with such a noisy bird, or one with a more unpleasant song. Three examples were brought home alive, and I fancy that no one on board during the remainder of the voyage will ever forget them; they commenced to sing at daylight and did not stop till nightfall. In a wild state these birds flock together during the heat of the day in a thick tree and sing in chorus. In appearance they are very Thrush-like. The young are browner above than the adults and streaked below.

Zosterops modesta E. Newton.

Zosterops modesta Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

Three adult males.

This curious dull-coloured White-eye was met with fairly abundantly on Mr. Thomasset's estate.

Cinnyris dussumieri (Hartl.).

Cinnyris dussumieri Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

One adult male.

I obtained only one male example of this species, with flame-coloured tufts, on Mahé; but three specimens of a Sun-bird procured at the same time and place differ to such a marked degree that I have separated them as a new species. The example of *C. dussumieri* obtained may be a straggler from one of the other islands, as all those obtained on Praslin and Felicité have flame-coloured tufts.

Cinnyris mahæi.

Cinnyris mahéi Nicoll, Bull. B. O. C. vol. xvi. p. 106.

Three adult males.

This new species is similar to *C. dussumieri* in general coloration, except that the pectoral tufts are pale lemon-yellow instead of flame-coloured.

I obtained these examples in the coffee-bushes on Mr. Thomasset's estate. This is probably the common species of Sun-bird on Mahé. I did not meet with it on any of the other islands.

Munia punctulata (Linn.).

Without doubt an introduced species. One male was obtained.

The Indian Mynah has also been introduced into the Seychelles, and is especially abundant on Mahé. I saw one white example. This bird, together with several other introduced species, will in time no doubt entirely supplant the native avifauna, as is the case in many other islands. No one appears to realize the danger of this fatal habit of introduction, especially as regards islands, until it is too late.

Once let an introduced bird or mammal establish itself, and sooner or later it begins to interfere with the native species, and no power on earth can check it.

TURTUR ROSTRATUS Bp.

Turtur rostratus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 513.

One adult female and one immature female.

I saw a few of these Doves at Cascade, but Mr. Thomasset tells me that they are not plentiful. Those obtained had their crops full of "red peppers."

I did not see the so-called *Turtur abbotti* on these islands. Mr. Ridgway (Proc. U.S. N. M. xviii. p. 513) proposes to separate *T. abbotti* from *T. picturatus,* which was supposed to have been introduced, as he says that his specimen, an adult female, "differs so decidedly in coloration from an adult male of true *T. picturatus* from Madagascar." Surely one would expect the female to differ from the male even to a marked degree, as is the case with *T. aldabranus* and *T. assumptionis.*

ALECTRŒNAS PULCHERRIMA (Scop.).

Alectrœnas pulcherrima Salvadori, Cat. B. B. M. xxi. p. 155; Ridgway, Proc. U S. Nat. Mus. xviii. p. 513.

Two pairs of adults; one nestling.

This beautiful Fruit-Pigeon is still numerous, thanks mainly to the protection afforded it by Mr. Thomasset on Mahé, M. E. Boullé on Praslin, and Mr. Birgne on Felicité.

It is an extremely tame bird, and is easily caught with a noose fastened to a long stick. Three examples were brought home alive and presented to the Zoological Society by Lord Crawford. The young in first plumage are greenish above, every feather being edged with greenish yellow. The underparts are greenish grey.

Really adult males have some of the grey feathers, those nearest to the blue abdomen, tipped with carmine, but to such a slight degree that it requires a close search to find them.

TINNUNCULUS GRACILIS (Less.).

Tinnunculus gracilis Ridgway, Proc. U.S. Nat. Mus. xviii. p. 513.

One adult female, one male scarcely adult.

This little Kestrel is peculiar to the Seychelles, but is by no means abundant. It is exceedingly tame, and is usually seen sitting on a bare branch, where it will often remain for a considerable time.

—GYGIS ALBA Sparrm.

Gygis alba Ridgway, Proc. U.S. Nat. Mus. xviii. p. 510.

One example. Bill hyacinth-blue at base, rest black; tarsi and toes pale blue; webs white; iris black.

I saw several examples of this Tern about 2000 feet above the sea-level. Others were flying round the grounds of Government House.

On April 2nd we left Mahé for a few days, and visited Praslin and Felicité. I append an account of the birds collected on these islands, which are within sight of Mahé.

PRASLIN ISLAND.

CINNYRIS DUSSUMIERI (Hartlaub).

Cinnyris dussumieri Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

Three adult males.

This Sun-bird is common on Praslin. All the examples obtained had the flame-coloured pectoral tufts.

TERPSIPHONE CORVINA (E. Newton).

Terpsiphone corvina Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

One adult male.

Bill, iris, tarsi, and toes black.

This handsome Paradise Flycatcher does not seem to be abundant on Praslin. I saw only one example, which was in the darkest and most shade portion of the woods close to the shore.

IXOCINCLA CRASSIROSTRIS (E. Newton).

Ixocincla crassirostris Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

Two adult males and three adult females.

This appears to be the commonest bird on Praslin. Examples from this island resemble those from Mahé in every particular.

CORACOPSIS BARKLYI E. Newton.

Coracopsis barklyi Ridgway, Proc. U.S. Nat. Mus. xviii. p. 513 ; Nicoll, Bull. B. O. C. xvi. p. 106.

I saw only one example of this Parrot, an immature female, which I obtained. It was feeding in a Magnolia, the only tree of its kind on the island. These birds are strictly preserved by M. Edouard Boullé, the owner of the estate on Praslin where they are found. Formerly they were killed in numbers by the natives for food. M. Boullé told me that he has recently seen about one hundred individuals together. The note of this Parrot is a very musical whistle, somewhat resembling that of *C. vasa* of Madagascar.

BUTORIDES ATRICAPILLA (Afzelius).

Butorides atricapillus Ridgway, Proc. U.S. Nat. Mus. xviii. p. 512.

One adult female.

This bird is numerous along the shore and in the swamps. I saw a pretty buff variety, but was unable to get it.

FELICITÉ ISLAND.

CINNYRIS DUSSUMIERI (Hartl.).

Cinnyris dussumieri Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

One adult male.

The example obtained had flame-coloured tufts.

TERPSIPHONE CORVINA (E. Newton).

Terpsiphone corvina Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

One adult male.

The example obtained was the only one seen on Felicité.

IXOCINCLA CRASSIROSTRIS (E. Newton).

Ixocincla crassirostris Ridgway, Proc. U.S. Nat. Mus. xviii. p. 514.

One immature female.

I saw a few of these birds on Felicité, but when we were there it was pouring with rain, and collecting was almost impossible.

ALECTRŒNAS PULCHERRIMA (Scopoli).

Alectrœnas pulcherrima Ridgway, Proc. U.S. Nat. Mus. xviii. p. 513.

One adult female.

This fine Pigeon is fairly numerous on Felicité.

On April 8th we left the Seychelles for Aden, passing St. Denis Island on the way. I saw several examples of *Sula cyanops* close to that island.

On April 14th we arrived at Aden. Just before we anchored, a Common Roller (*Coracias garrula*) flew into the rigging. During our stay of three days we saw many Gulls (*Larus hemprichi*), and four were purchased and brought home alive for the Zoological Gardens. On April 19th, when in the Red Sea, a Common Wheatear (*Saxicola œnanthe*) flew on board; the next day several Swallows (*Hirundo rustica*) were seen; and on April 21st a White Wagtail (*Motacilla alba*) came on board. On April 23rd a Blackcap (*Sylvia atricapilla*) and several Swallows came on board.

When we arrived at Suez on April 23rd a pair of Gulls (*Larus leucophthalmus*) were seen, and many Swallows were flying about over the water.

In passing through the Suez Canal many interesting birds were seen, such as White Storks, Cranes (*Grus communis*), Marsh-Harriers, and Grey Shrikes (*Lanius meridionalis*).

At Port Said, Capt. Stanley and Mrs. Flower visited us on board. Numbers of Rough-legged and Common Buzzards were seen flying over the harbour.

During our stay at Port Said Meade-Waldo and I went back up the Canal for about eleven miles and landed at one of the stations called Tinch, where I collected examples of the following birds :—

Ruticilla phœnicurus.
Saxicola isabellina.
Motacilla borealis.
Anthus trivialis.
Phylloscopus bonellii.
Lanius nubicus.

Many other birds were seen but not obtained, amongst them being the Common Cuckoo (*Cuculus canorus*). I mention this bird in particular because I was much struck by its flight. When we see Cuckoos in England we only see their "breeding flight," but when on migration their flight much resembles that of a Sparrow-Hawk.

On April 27th we left Port Said for Gibraltar.

The next day a Wheatear (*Saxicola œnanthe*) and several Common Kestrels came on board. On April 29th a male Bluethroat (*Cyanecula suecica*) flew on board, as well as several Turtle-Doves (*Turtur communis*), two Bonelli's Warblers, a Wheatear (*Saxicola melanoleuca*), and a Whinchat (*Pratincola rubetra*). Several Petrels (*Oceanodroma leucorrhoa*) followed the ship for some days. On April 30th, Swallows, Turtle-Doves, Blue-headed Wagtails, and a Nightingale (*Daulias philomela*) were seen. On May 1st, a Rufous Warbler (*Aëdon galactodes*) and a Blue-headed Wagtail came on board, while on the following day a Chat (*Saxicola caterinæ*) was obtained. The wind during these few days was north-west. On May 5th a flock of Sparrows (*Passer domesticus*) spent the morning in the rigging. That evening we anchored at Gibraltar.

During our stay there Meado-Waldo and I spent a day at Algeciras, where I saw several birds which I had not previously met with.

On May 8th we left Gibraltar for Cowes. The same day, a Water-Pipit (*Anthus spipoletta*), a Rufous Warbler, Tree-Warbler (*Hypolais*), Turtle-Doves, and a Dunlin were seen on board or close to the ship.

On May 11th a Wheatear (*Saxicola œnanthe leucorrhoa*) was obtained.

I make mention of all these migrants seen on board as I consider them worthy of notice; too much attention cannot be paid to birds on migration in any part of the world.

On Sunday May 13th we dropped anchor at Cowes, and the most interesting voyage which I have ever made was over.

The distance covered was 19,851 miles, and we had been almost 187 days absent from England.

During the voyage I preserved just over 500 bird-skins as well as mammals and other specimens.

My very best thanks are due to Lord Crawford for his great kindness in taking me with him for the third time. The great interest, to a naturalist, in visiting these little-known islands can be better imagined than described.

My best thanks are also due to the Hon. Walter Lindsay and Dr. Deane for much valuable help in collecting during the voyage.

I have worked out my entire collection of birds at the British Museum, and for much kind help I am indebted to Dr. Bowdler Sharpe and Mr. Ogilvie-Grant, and to their excellent assistants Messrs. Chubb and Wells.

XLI.—*Notices of recent Ornithological Publications.*

[Continued from p. 602.]

104. *Azzolini on Italian Wagtails.*

[Budytes italiani (Strisciaiole e Cutti) (Boarine). By Dr. Enrico Azzolini. Rovereto, 1906. Pp. i–vi, 1–55; 7 figs.]

This, the forty-second publication of the Museum of Rovereto, contains an account of the Italian forms of the genus *Budytes,* as understood by the author, who proposes a new species, *B. plumbeiceps,* near *B. borealis,* which is fully discussed as regards coloration and habits. Spring and autumn plumages are described for all the forms.

105. *'Avicultural Magazine.'*

[Avicultural Magazine. The Journal of the Avicultural Society. New Series. Vol. iv. Nos. 6–9. April–July, 1906.]

It would be invidious to select any one of the articles in these numbers as more important than another, since they appeal differently to different classes of readers. Some deal with the breeding of birds in captivity, some with foreign travel, others with individual genera or species.

Mr. St. Quintin continues his avicultural successes, of which the chief are the nesting in his aviaries of the Brush-Turkey and the Pine-Grosbeak; Mrs. Johnstone has succeeded for the first time with *Sarcops calvus* in confinement (pl.); Mr. Fasey writes on the breeding of Bourke's Parrakeet, Mr. Wormald on that of the Tufted Duck; Mr. Seth-Smith on the Green-winged Pigeons (*Chalcophaps*); Mr. Meade-Waldo on Sand-Grouse (col. pl.); Dr. Butler on *Calopelia puella* (col. pl.); Mr. Phillipps on *Malurus cyaneus* and *Merops apiaster*; Mr. Bonhote on *Lophoictinia isura* (pl.); Mr. Finn on eclipse plumage; Mrs. Gregory on garden pets (pl.); Mr. Percival on bird's-nesting by the Nile and the Atbara; Mr. Ingram on the Guacharo (pl.); and last, but not least, Mr. Nicoll tells us of the successful importation of the young of the Sacred Ibis to London (pl.) and of its life on Dassen Island. The controversy on Aviaries *v.* Cages still continues.

106. *Collett on Birds new to Norway.*

[Om en Del for Norges Fauna nye Fugle. By R. Collett. Christiania Vidensk.-Selsk. Forh. 1905, no. 10.]

The author continues the records of birds new to his country up to the year 1905. He is able to add eight species to former lists—namely, *Turdus sibiricus, Hirundo daurica*, and *Charadrius dominicus* (*fulvus*) all of the East Siberian Fauna; *Melanocorypha calandra, Merops apiaster, Erythropus vespertinus, Aluco flammeus*, and *Nycticorax griseus* of the South or Middle European Fauna. Four new hybrids will also be found mentioned in the following paper.

107. *Collett on Norwegian Hybrids.*

[Hybrids among Norwegian Birds and their Diagnoses. By R. Collett. *T. c* no. 11.]

Prof. Collett's papers are always worthy of our best attention, and in this case he gives us details of hybrids which involve the Redwing, the Fieldfare, the Blackbird, and the Tetraonidæ in general. Many of these hybrids are extremely rare.

108. *Dresser's 'Eggs of the Birds of Europe.'*

[Eggs of the Birds of Europe, including all the Species inhabiting the Western Palæarctic Area. By H. E. Dresser, F.Z.S. Pts. 3, 4. London: 1906. Price 21*s.* net.]

These two parts of Mr. Dresser's work need no extended notice, as an account of the whole scheme will be found above (pp. 192, 367). The plates maintain a high standard of excellence, though the three-colour process is, in its present condition, perhaps somewhat better adapted to the larger than to the smaller eggs. The families treated are the Falconidæ (part.), Pandionidæ, and Turdidæ (part.), and we still think that in certain cases a greater range of variation in the specimens figured might be obtained by selection from larger series, as, for instance, in the case of *Falco islandus*. On the other hand, we do not quite see the reason for giving figures of twelve eggs of *F. eleonoræ*. The plates, however, shew the examples very clearly, and appear to improve with every part of the work.

109. *'The Emu.'*

[The Emu. A Quarterly Magazine to popularize the Study and Protection of Native Birds. Vol. v. pts. 3, 4 (Jan.–April, 1906). 6 pls. Melbourne, Australia, 1905–6.]

Besides the usual notes and shorter papers, part 3 contains an account of the fifth (Adelaide) Session of the A. O. U., under the presidency of Capt. F. W. Hutton, and the Annual Report, which includes the records of birds striking the lanterns at lighthouses (1904–1905), though these seem somewhat scanty. The President's address was "On European and other Birds liberated in Victoria." An expedition was made to the "Reed-beds" by way of Holmfirth and Weetunga, but the main camping-out, of ten days, was to Kangaroo Island, and of this a most interesting account is given, supplemented by a report on the birds observed, by Mr. A. G. Campbell, who proposes to separate no less than four—or even eight—forms subspecifically and one (*Acanthiza halmaturina*) specifically.

Mr. A. Mattingley writes on the young Cuckoo and Bird-Migration ; and an account is given (p. 177) of additional protection afforded by New South Wales to its native birds.

In part 4 we find an article on a "Visit to an Ibis Rookery" by Dr. E. A. D'Ombrain, "Oological Notes and further description of a new Fruit-Pigeon" [*Ptilopus minutus*] by Mr. A. G. Campbell, "Domestic Wild-Cats *v.* Native Birds" by the same author, and minor contributions by Dr. Cleland, Mr. Mattingley, and Mr. A. G. Campbell. The Editors note the occurrence of a Wagtail in Queensland, for which Mr. A. J. North proposes the name *Motacilla barnardi.*

110. *Finsch on the Ornis of Java.*

[Zur Erforschungsgeschichte der Ornis Javas. Von Dr. O. Finsch. J. f. O., April 1906.]

No one knows the birds of Java and their history better than Dr. Finsch, formerly of the Leyden Museum, now of Brunswick, and we are glad to hear what he has to say on the subject. In this essay he describes all the ornithological work done in Java from the days of Baron von Wurmb, in 1779, to the present time, in which Herr Bartels, the discoverer of the new Owl, *Syrnium bartelsi,* figured in our last number, is the chief worker. The parts played by Horsfield, Leschenault, Diard, Duvaucel, Raffles, Reinwardt, Kuhl, Salomon Müller, Van Hasselt, Schlegel, Bernstein, Wallace, Warburg, Vorderman, and other well-known naturalists are carefully set forth, and full references to their numerous publications on the subject are given in footnotes. Vorderman was the author of the last catalogue of Javan birds, wherein 410 species were enumerated. Dr. Finsch tells us that this number has since been increased to 430, of which 77 are restricted to the island. Four of these endemic forms have been deemed worthy of generic rank—

namely, *Rhinococcyx* Sharpe, *Stasiasticus* Hartert, *Laniellus* Sw., and *Psaltria* Temm. But Dr. Finsch states that there remains more work to be done in the eastern part of Java, and in the further exploration of the high volcanoes, where new species may still lie hidden.

111. *Gregory's 'Dead Heart of Australia.'*

[The Dead Heart of Australia, a Journey around Lake Eyre in the Summer of 1901–2; with some Account of the Lake Eyre Basin and the flowing Wells of Central Australia. By J. W. Gregory, F.R.S., D.Sc. London: John Murray, 1906. Price 16*s*. net.]

This is not a bird-book, but it is an instructive and well-written narrative of an adventurous journey through a country of which the birds are little known, and we should advise all naturalists to read it. Prof. Gregory, accompanied by six of his pupils from the Geological School of the University of Melbourne, went by the northern railway from Adelaide to Hergott (440 miles) and travelled with camels round the great central depression called "Lake Eyre," in a temperature occasionally reaching 120° Fahr. One of the company, Mr. C. M. Lyons, collected and observed the birds of the district, and has published in 'The Emu' (vol. i. pp. 133–138) a series of good field-notes on them. Specimens of 33 species were obtained and 22 others were identified. The rare Red-kneed Dotterel (*Erythrogonys cinctus*) was ascertained to breed there, and young about three weeks old were obtained. In many places birds were abundant and the water-holes were "thronged with Ducks," besides Swans, Shags, Sea-Gulls, Pelicans, Pigeons, and Cockatoos, so that even the Lake Eyre district, dry and hot as it is, is by no means birdless.

112. *Hartert on the Birds of Babber.*

[On the Birds of the Island of Babber. By Dr. Ernst Hartert. Nov. Zool. xiii. pp. 288–302.]

A collection made for Mr. Heinrich Kühn by some native taxidermists in the island of Babber—one of the eastern islets of the south-west group in the great Eastern Archipelago—contains examples of 76 species, which are now catalogued, with explanatory notes. Four new subspecies are denominated *Ninox boobook cinnamomina, Muscicapula hyperythra audacis, Orthnocichla subulata advena,* and *Pachycephala melanura tepa.*

Dr. Hartert points out that the Ornis of Babber "differs considerably from that of the more western islands," being in many respects the same as, or closely allied to, that of the Tenimber group.

113. *Hartert on the Birds of Luang.*

[On the Birds of Luang. By Dr. Ernst Hartert. *T. c.* pp. 302–304.]

On leaving Babber Mr. Kühn's taxidermists visited the islet of Luang, near Sermatta, of the same group, and obtained examples of 41 species of birds, of which the names are now recorded, accompanied by a few remarks. One example of the Australian *Grallina picata* is among them, shewing that this species occasionally strays far northwards.

114. *Hartert's 'Miscellanea Ornithologica.'*

[Miscellanea Ornithologica. Critical, Nomenclatorial, and other Notes, mostly on Palæarctic Birds and their Allies. By Ernst Hartert, Ph.D. Part III. *T. c.* pp. 386–405.]

Dr. Hartert continues his valuable notes (see 'Ibis,' 1905, p. 123), and discourses on *Anthoscopus, Panurus, Colœus,* the Palæarctic Muscicapidæ, the African *Pycnonoti,* and the Palæarctic forms of *Lanius,* which last form one of the most thorny problems in Ornithology. He criticizes Mr. Ogilvie-Grant's treatment of the *Lanii* (Nov. Zool. ix. p. 449, 1902) pretty severely, and utterly refuses to agree with many of his conclusions.

Dr. Hartert maintains that *Lanius excubitor* and the allied form usually called *Lanius major* are specifically inseparable. "Both varieties occur in the same area, and both have been found in the same nest. It is thus perfectly clear that only one form of Grey Shrike inhabits Northern Europe, namely *Lanius excubitor*." This is an important point to British ornithologists, but those interested in the Shrike-question should study the whole article.

Dr. Hartert proposes to alter the name *Lanius caudatus* of Cabanis (1869) to *Lanius cabanisi*, because Brehm in 1855 used the same "silly" name for *L. nubicus*. We do not see the necessity of this change, as the "silly name" has never been adopted and is now long ago forgotten.

115. *Hellmayr on Spix's Types.*

[Revision der Spix'schen Typen brasilianischer Vögel. Von C. E. Hellmayr. Abh. k. Bayer. Ak. d. Wiss. ii. Kl. xxii. Bd. iii. pp. 563–726.]

This is a good piece of work, which will be most acceptable to all students of Neotropical Ornithology. Mr. Hellmayr has spent nearly two years in examining and comparing the types of Spix's Brazilian birds in the Munich Museum, and now gives us his results with full explanations. We do not say that we accede to all his proposed alterations in nomenclature. Far from it—we think that no change in an established name should be made when there is the least doubt on the point, and that obsolete terms should not be revived under any circumstances to the prejudice of well-known names.

After an introduction, which contains a short but sufficient account of Spix and his travels, our author takes the plates and descriptions of the two volumes of the 'Avium Species Novæ' one after the other, and gives us a disquisition on them, shorter or longer as the case requires, specifying exactly the specimens now at Munich and their localities. An alphabetical Index at the end renders it easy to find what, in our author's opinion, the modern version of each of Spix's names should be.

The following names appear to be new:—*Lamprops tanagrinus violaceus* (p. 616), *Formicivora ochropyga* (p. 663), *Ortalis columbiana* (p. 698), and *O. spixi* (p. 695). *Jabiru* (!) (p. 711) is a new generic name for *Mycteria americana*, but we prefer the old one and shall stick to it!

We venture also to suggest that when such newly-coined generic names as *Crocomorphus* (p. 604) and *Myospiza* (p. 673) are introduced some clue should be given as to their place of origin.

Mr. Hellmayr shews clearly that the *Caprimulgus hirundinaceus* of Spix is a true *Caprimulgus* allied to *C. parvulus*, and not a *Chordeiles* as supposed by Hartert (Cat. B. M. xvi. p. 614).

116. *Hellmayr on little-known Neotropical Birds.*

[Critical Notes on the Types of little-known Species of Neotropical Birds. Part I. By C. E. Hellmayr. Nov. Zool. xiii. pp. 305-352.]

This is also a valuable contribution to our knowledge of the Neotropical Ornis. It is the result of a careful examination of the typical specimens of South-American birds in the British Museum, which the author has made during the past four years, while he has been greatly assisted by the loan of typical specimens from other museums. We believe Mr. Hellmayr to be a very accurate worker, and that his identifications may, as a rule, be relied upon without hesitation, although in some cases he states them, perhaps, in a little too positive manner. Moreover, when the difficult character of the groups of which he mostly treats is considered, and the advantages as to materials which he has enjoyed, Mr. Hellmayr is, in our opinion, a little too severe upon previous authors. It has been well said that "he who does not make mistakes does not make anything." At the same time it is good that all mistakes should be faithfully corrected.

The results arrived at in this paper, though of much importance, are mostly of a strictly technical character; and we need not do more than call general attention to them. The following names appear to be now published for the first time:—*Myrmelastes exsul maculifer* (Panama), *Knipolegus sclateri* (Rio Madeira), and *Chloropipo holochlora litæ* (N.W. Ecuador).

117. *Hellmayr on Birds from Pará.*

[Notes on a Second Collection of Birds from the District of Pará, Brazil. By C. E. Hellmayr. Nov. Zool. xiii. pp. 353–385.]

This is another important contribution to our knowledge of the Ornithology of South America from the same industrious pen. It gives an account of a collection of 420 specimens sent to the Tring Museum by Mr. W. Hoffmans from Prata, a locality situated east of the city of Pará. The species represented in it are 120 in number, of which two—*Microcerculus marginatus occidentalis* and *Tachyphonus surinamus insignis*—are now described for the first time, while two others have been previously characterized elsewhere.

Amongst the species now added to the list of the birds of the district of Pará is *Avocettula recurvirostris*, previously believed to be confined to Guiana. There are also in the collection good series of the newly-described *Conopophaga roberti* and *Hypocnemis vidua*, hitherto known only from single specimens, besides examples of two "exceedingly rare" Humming-birds, *Agyrtria nitidifrons* and *Lophornis gouldi.*

118. *Holland on Birds from East Africa.*

[A List of the Birds collected near Mombasa, East Africa, by William Doherty. By W. J. Holland, LL.D. Ann. Carneg. Mus. iii. p. 452 (1905).]

This list contains the names of 106 species of birds obtained by the late William Doherty in September and October, 1900, near Mombasa, British East Africa. The doubtful specimens have been determined by Dr. Reichenow, and his arrangement is followed.

119. *Johnston's 'Liberia.'*

[Liberia. By Sir Harry Johnston, G.C.M.G., K.C.B., D.Sc. With an Appendix on the Flora of Liberia, by Dr. Otto Stapf. Two vols. 8vo. London: Hutchinson and Co., 1906. Price 42*s*. net.]

Sir Harry Johnston, having monographed two of our East-African Protectorates, has now turned his attention to the West Coast of Africa, and in two bulky and profusely illustrated volumes gives us an account of all that is known about Liberia—a "civilized Negro State in the West African forest," in which he has lately become interested and to which he has paid several visits.

The first volume is devoted to the ancient and modern history of the Republic, together with essays on its commerce, geography, geology, and climate, the only thing which we can see in it relating to birds being a pretty coloured picture of the Red-headed Guinea-fowl (*Agelastes meleagrides*), p. 370. Sir Harry's second volume, however, is nearly entirely devoted to Natural History and Anthropology, and contains a special chapter on "Birds," to which we must call attention. After reviewing the principal groups of the Liberian Avifauna, in which many characteristic figures from the author-and-artist's own sketches are introduced (*Phyllopezus africanus, Lepterodius gularis, Ceratogymna elata*, &c.), besides coloured plates of *Ceryle maxima, Ortholophus leucolophus, Ceratogymna atrata*, and *Eurystomus afer*, the author adds, in an Appendix, a complete list of the birds observed or collected in Liberia and noticed by various authorities on the subject, amongst whom Dr. Büttikofer is the most important. This list, which has been prepared for Sir Harry by Mr. Charles Chubb, of the Zoological Department, British Museum, is of considerable length, embracing the names of some 260 species, and will be of much use to ornithologists. At the same time we may say that it would have been of still greater use if the authority for the occurrence of the species in Liberia had been given after each name. This has only been done in some cases, mainly where the specimens were collected by Mr. Reynolds, and have been named in Mr. Chubb's previous list published in the P. Z. S. for 1905 (i. p. 205).

Sir Harry tells us (p. 777) that the typical *Psittacus erithacus* with a red tail does not occur in Liberia, its place being taken by *P. timneh* with a grey tail *. An example of the Grey Phalarope (*Phalaropus fulicarius*) was obtained in

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* *Cf.* Johnston in P. Z. S. 1905, i. p. 204.

Liberia by Mr. J. Maitland Pye-Smith on the 27th of March, 1905. This appears to be the first record of the occurrence of this far-wandering species so far south in Africa*, though it is a recognised winter-visitor to Chili, India, and New Zealand.

120. *Jourdain on the Eggs of European Birds.*

[The Eggs of European Birds. By the Rev. Francis C. R. Jourdain. London: R. H. Porter. Part I. 8vo. Pp. i–iv, 1–80; pls. i.–xiv. Price 10*s.* 6*d.* net.]

The first part of Mr. Jourdain's book makes a further addition to the works on Oology now in progress. The letterpress is excellent, and gives a fully detailed account of the nest and eggs of each form, with references to plates already published—and besides, what is even more important nowadays, a sketch of the breeding-range of the different races that have been hitherto described. We may prefer the 12th edition of Linnæus's 'Systema Naturæ' to the 10th, and may not be inclined to follow the author closely as regards nomenclature, but there can be only one opinion as to the necessity of an exact knowledge of the various geographical races; and should their nests and eggs prove to differ, this should assuredly be made known. Moreover, any such differences as exist should be reckoned at their full worth in deciding the difficult question of the validity of the various races.

In his nomenclature the author would have done well to be more consistent. In some cases he heads the account relating to a bird with a binomial appellation, and then subdivides the species into geographical races by the use of trinomials. This, we hold, is the correct method, and is that commonly used in allied branches of science. To apply trinomials to all these races without a general binomial heading is, in our opinion, equivalent to destroying the species entirely, or, in other words, to dividing the genus directly into races. In other cases Mr. Jourdain heads his account with a trinomial race-title, and this forces him to commit such an absurdity as to call the common Serin Finch *Serinus canarius serinus,* while he places the Greenland Redpoll under the general title of Coues's Redpoll. Tautology is quite a minor question.

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* It has occurred occasionally near Tangier, in N.E. Africa (see Irby, Orn. Straits of Gibraltar, 2nd ed. p. 275).

Among the many useful points in the work we may notice the lists of local British and foreign names of the birds, the references to other forms the range of which abuts upon the European area, the measurements of the eggs, and the determination of the approximate weight of the shells.

It is of course impossible to avoid occasional slips, but we must demur to the statements that *Corvus cornix tends* to replace *C. corone* in Northern Scotland, that the Chough probably *often* lays its eggs at intervals, that the Goldfinch uses a *little* moss in its nest, while we deny that the Starling has become established as a breeding species in Northumberland only within the last forty years. But the comparative insignificance and infrequency of these inaccuracies only strengthens our opinion of the general accuracy of Mr. Jourdain's work.

The plates by no means reach the standard of the text, especially as regards coloration, but we hope to be able to criticize them more favourably in future parts of the book.

121. *Journal of the South African Ornithologists' Union.*

[The Journal of the South African Ornithologists' Union. Vol. ii. No. 1. Pretoria, June 1906.]

We have already spoken of the founding of this new ornithological journal and of the successful issue of the first two numbers*. Number 1 of vol. ii., which is now before us, contains an account of the second annual meeting of the Union, held at Johannesburg on August 30th, 1905, and several well-written papers on South African Ornithology. Mr. Bucknill describes some new South African eggs, and illustrates them in a clear and well-coloured plate.

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* See 'The Ibis,' 1905, p. 635, and 1906, p. 372.

Mr. Roberts contributes field-notes from Wolmaransstad, Transvaal. Mr. W. L. Sclater prints the text of his essay on bird-migration in South Africa, which was read before Section D of the British Association at Johannesburg in August last. Other communications are by Mr. E. Symons, Capt. Horsbrugh, Mr. Millar, Mr. Haagner, and Mr. Lionel Taylor. Mr. Haagner's field-notes on the Bronze Cuckoos of South Africa are of special interest, as so little is yet known about the breeding-habits of foreign Cuckoos. A series of short notes on subjects relating to South African Ornithology concludes the number.

We are sorry to say that an error was made in our last notice of this journal (above, p. 372). The principal Editor of the South African Journal is Mr. John A. Bucknill (who is assisted by Mr. W. L. Sclater and Dr. J. W. B. Gunning), and *not* Mr. A. Haagner, who is, however, a very active worker and contributor, and is Hon. Secretary and Treasurer of the S.A. Ornithologists' Union.

122. *Kleinschmidt's 'Berajah' and 'Falco.'*

[Berajah, Zoographia infinita. Lieferung 1. *Saxicola borealis.* Tafeln i.–ix. (i.–vi. coloured), Seiten 1–22. (W. Schlüter, Halle-a.-S., 1905.)

Falco, unregelmässig im Anschluss an das Werk 'Berajah, Zoographia infinita,' erscheinende Zeitschrift, Jahrgang 1905. Nos. 1–3 (106 pages, 8vo). Mit einer Farbentafel (I. *Falco barbarus germanicus* Erl.). (W. Schlüter, Halle-a.-S.)]

Both these publications are devoted to the promotion of a new doctrine, which involves no less than a total revolution of all that has been taught in zoology since the time of Linnæus. According to the views of the learned author (who is a pastor at Volkmaritz, near Dederstedt, bez. Halle-a.-S., Prussia) there are no such things as species or subspecies, but the "*real natural species*" is to be found in the "*Formenkreis*" (circle of forms) or "*Lebensring*" (circle of life). This consists of a group of species, more or less allied, or in some cases not allied at all, as is shown in the first part of 'Berajah,' which treats of the "Formenkreis" of *Saxicola borealis.* Scarcely any ornithologist will agree with the author in uniting with *S. leucorrhoa* Gmel. and *S. œnanthe* L. only *S. phillipsi* Shelley (of Somaliland) and *S. seebohmi* Dixon (of Algeria). Why not join to them other allied forms or species? Besides these four, separated under "A. Formæ capitales," there is a division "B. Formæ subtiles," which enumerates (*a*) five named and (*b*) six unnamed forms, based partially on single specimens, so that the author himself is doubtful as to the value of some of these "subtile" forms. According to his present knowledge, the "Formenkreis" of *Saxicola borealis* extends over fifteen forms. A new head-name becomes necessary for every "Formenkreis"—for example, *Erithacus poeta* for the Nightingales, *Erithacus dandalus* for the Robin, and *Turdus bragi* for the Song-Thrush!

But we have said enough. These few remarks will suffice to give an idea of the principles of the "Formenkreis," the scientific value and usefulness of which we leave our readers to judge for themselves.—O. F.

123. *Krause's 'Palæarctic Oology.'*

[Georg Krause. Oologia universalis palæarctica. Lief. 1. 4to. Stuttgart, 1906. Price 1*s*. 3*d*. net each part.]

Of this work, to be completed in some 150 parts in about two years, perhaps the best idea can be given by a quotation from the prospectus:—"With this first part begins a work which by his quite unique abundance of pictures true to nature promises to be a fundamental and monumental ideal work on palæarctic oology."

The plates are somewhat uneven, those of the eggs of the Golden Eagle and Song-Thrush being much better than those of the Raven and Quail; but, on the whole, we incline to a sanguine view of them, and the number of varieties figured will certainly be a most useful feature in the book. The letterpress, which is on a card equal in size to each plate, merely states the Latin, German, and English names, the breeding-range, the localities affected, and brief details of the nest and eggs. But we cannot understand why a better translation of the German text was not secured, if the English was to be given at all. What, for instance, are we to understand by "a nearly equatorial dopp-height" or a "moderately blank" egg-shell?

124. *Lampe on the Birds in the Museum of Wiesbaden.*

[Katalog der Vögel-Sammlung des Naturhistorisches Museum zu Wiesbaden. I. Teil. Picariæ und Psittaci. II. Teil. Columbæ und Pterocletes. Von Kustos Ed. Lampe. Jahrb. Nassau. Ver. f. Naturk. 1904–5.]

These are the first two parts of a catalogue of the specimens of birds exhibited in the Natural History Museum of Wiesbaden, prepared by Herr Lampe, the Custos. The collection is not large, containing examples of only 341 species of Picariæ, 104 of Psittaci, 85 of Columbæ, and 8 of Pterocletes, but there are some valuable specimens in it received from Bruijn, of Ternate, and a single example of the large extinct Fruit-Pigeon of Norfolk Island (*Hemiphaga spadicea*), the history of which is unfortunately unknown.

125. *Menegaux and Hellmayr on the Tracheophonæ.*

[Etudes des espèces critique et des types du groupe des Passereaux Trachéophones de l'Amérique Tropicale appartenant aux collections du Museum. Par MM. Menegaux et C. E. Hellmayr. Pt. I. Bull. d. Mus. d'H. N. 1905, p. 372. Pt. II. Mém. S. d. H. N. d'Autun, xix. pp. 43–126 (1906). Pt. III. Bull. Soc. Phil. 1906, pp. 24–58.]

This is a useful piece of work, and we ought to be thankful to the authors for having undertaken it. The Tracheophonine Passeres of the Neotropical Ornis contain some of the most difficult groups in the whole Class of Birds to treat satisfactorily. The famous Museum of Paris is the fortunate possessor of a large series of specimens of these forms, among which are many types of species described by d'Orbigny, Lafresnaye, Castelnau, Deville, Saint-Hilaire, and other well-known authorities. The authors of these three memoirs have undertaken the hard task of searching for these types (which were not in all cases properly labelled) and other critical specimens, and of giving us all the information they can upon them. Why they should have published the results of their studies in three different journals it is difficult to understand. We should have thought that the 'Bulletin' of the Museum of Natural History would have been the proper place for the second and third parts of their memoir as well as for the first.

In the first part the families Conopophagidæ and "Hylactidæ" are discussed, "Hylactidæ" being a new name for the family called "Pteroptochidæ" in the 'Catalogue of Birds' of the British Museum, which the authors profess to follow. But *Hylactes*, they allege, is an older name than *Pteroptochus*, and it is the practice to form a family-name from the oldest genus. The names of the species of Conopophagidæ and Hylactidæ are taken in systematic order, nearly in accordance with the arrangement in the 'Catalogue of Birds,' and an exact list of the specimens at Paris is given, with localities, dates, and critical remarks.

The second part of this memoir relates to the Dendrocolaptidæ, of which 121 species are discussed in the same fashion. Two new forms are introduced—*Geositta paytæ*, from N.W. Peru, and *Philydor columbianus riveti*, from Ecuador. We may remark that several species which we should consider valid are here reduced to the rank of subspecies.

The third part is devoted to the Formicariidæ, and contains notes on 57 species and subspecies, of which three are described as new—*Myrmelastes cryptoleucus* from Pebas (Amazonia), *Formicivora devillei* from N.E. Peru, and *Chamæza brevicauda venezuelana* from Venezuela.

We hope that the authors will continue their studies, and treat the Tyrannidæ and other obscure groups in a similar manner.

126. *Miller on Birds from Durango, Mexico.*

[List of Birds collected in North-western Durango, Mexico, by J. H. Batty, during 1903. By W. D. Miller. Bull. Am. Mus. Nat. Hist. xxii. pp. 161–181.]

An account is given of a collection of birds made for the American Museum of Natural History by Mr. J. H. Batty in 1903, in the north-western part of the Mexican State of

Durango. The collection contained 820 specimens, which are referred to 132 species.

Mr. Miller observes that "in the case of several species the specimens from Durango are almost exactly intermediate between the representative subspecies of the South-western United States and those of Central Mexico, and cannot properly be referred to either." Five instances are given of the occurrence of this phenomenon, which is by no means unknown in the Eastern Hemisphere.

No new subspecies are described, but many useful critical notes are given, and a few field-notes by the collector.

127. *North on a new Bird-of-Paradise.*

[Description of a new Bird-of-Paradise. By Alfred J. North, C.M.Z.S., Ornithologist, Australian Museum, Sydney. Vict. Nat. xxii. p. 156 (1906).]

Paradisea granti, founded upon a single skin in the Australian Museum, Sydney, which is believed to have come from German New Guinea, is closely allied to *P. intermedia* De Vis and *P. augustæ-victoriæ* Cab., but has the flank-plumes reddish orange and the yellow collar on the lower throat much broader, as shown in an accompanying figure.

128. *Ogilvie-Grant on Malayan Birds.*

[Fasciculi Malayenses: Anthropological and Zoological Results of an Expedition to Perak and the Malay States, 1901–1902, undertaken by Nelson Annandale and Herbert C. Robinson under the Auspices of the University of Edinburgh and the University of Liverpool. Report on the Birds by W. R. Ogilvie-Grant. Zoology. Part III. July 1905. 4to. Pp. 65–124. Williams and Norgate.]

On their travels through Perak and the neighbouring Malayan States, Messrs. Annandale and Robinson did not neglect the birds, although they had many other subjects to attend to. The third Part of the 'Fasciculi Malayenses' (a publication which gives the results of the Expedition) contains a report upon the birds of the country traversed, drawn up by Mr. Ogilvie-Grant, who enumerates 225 species and gives the locality of every specimen, besides remarks on the identification, where necessary. Short field-notes by Mr. Robinson are added. The species catalogued are mostly well-known forms of the Malay Peninsula, but a new Bulbul is described as *Pycnonotus robinsoni,* and several little-known species are further elucidated.

In his "introductory note," Mr. Robinson points out that the avifauna of the Patani States is on the whole more Burmese than Malayan, while the affinities of the high mountain-fauna are puzzling, both Bornean and Sumatran forms being represented, though the latter are predominant.

129. *Raspail on the Birds of Gouvieux, Northern France.*

[Une Station Ornithologique dans l'Oise. Nouvelles observations sur les oiseaux ayant niché dans le périmetré du Territoire de Gouvieux, suivies de la liste des oiseaux qui y sont régulièrement ou accidentellement de passage. Par Xavier Raspail. Mém. Soc. Zool. France, xviii. p. 32 (1905).]

The author has studied the birds of the territory of Gouvieux, in the Canton of Creil, bordered on one side by the River Oise, for the past twenty years, and now presents us with a summary of his results in an article of 170 pages. After describing the locality and the varied nature of the scenery, which comprises a mixture of cultivated land, woods, meadows, and marshes, he gives a list of the 103 species of birds which he has found nesting within the district, and his observations upon them. They are mostly those that would be found in one of the southern counties of England, but there are some differences. *Motacilla alba typica* is the common and abundant form at Gouvieux, but *M. a. yarrelli* is also found occasionally, and has been ascertained to breed there. The Oriole is a regular summer visitant, arriving early in May. The Crested Lark is common. The author maintains the specific difference of the larger Sparrow-Hawk (*Accipiter major*) and figures its eggs. The Black Redstart (*Ruticilla tithys*) has been found nesting every year since 1905, but was not previously known in the district.

130. *Reiss on Migration across the Andes of Ecuador.*

[Zum Vogelzuge auf die Hochgebirge von Ecuador. Nach W. Reiss mitgetheilt von O. Finsch. Aquila, xii. (1905).]

Dr. Finsch calls attention to the fact that Dr. Reiss, on his journey across the Andes from Riobamba in Ecuador to Macas, ascertained that large flocks of birds (Snipes, Ibises, Herons, and others) cross the pass of Atillo (10,000 feet) every year from east to west, and that multitudes of them perish on meeting a very severe contrary blast of wind near the summit of the pass, so much so that their bodies are collected by the natives in quantities for food. A return migration from west to east takes place a few months later. That birds should be driven by *furor migratorius* to cross a pass of this great altitude seems to be a new fact, and worthy of further enquiry.

131. *Report of the South African Museum for* 1905.

[Report of the South African Museum for the Year ending 31st December, 1905. Presented to both Houses of Parliament by command of H.E. the Governor, 1906.]

This Report contains an account of the work performed by the Director and his staff (of nine officers) during the year, and gives a list of the additions made to the collections in the various Departments during the same period. In the Department of Vertebrates four accessions to the collection of birds are specially noticed—an example of the rare Night-Heron (*Nycticorax leuconotus*) from Durban, a specimen of Allen's Reed-Hen (*Porphyrio alleni*) from Touws River, a further consignment of 138 South African birds' eggs presented by Major Sparrow, and a series of 210 birds from the Zambezi Valley in N.E. Rhodesia, presented by Dr. F. E. Stoehr, of the Geodetic Survey. A specimen of a Sun-bird (*Nectarinia kilimensis*) from the district of Melsetter, Southern Rhodesia, was obtained by purchase. This species is new to the South-African list.

We notice with regret that Mr. W. L. Sclater has resigned his post as Director of the South African Museum, and hope that the new Director will not fail to continue the series of volumes on the Fauna of South Africa which his predecessor has so well commenced.

132. *Riley on the Birds of the Bahamas.*

[Birds of the Bahama Islands. By Joseph H. Riley (Geographical Society of Baltimore). Baltimore, 1905.]

The author, who is one of the staff of the U.S. National Museum, was in charge of the division of "Land-zoology" in the expedition sent out under Dr. G. B. Shattuck to the Bahama Islands, in 1903, by the Geographical Society of Baltimore, and has accepted the task of discussing the birds of the Bahamas in the volume of "Results." His paper, as he tells us, is rather written as a review of our present knowledge of the Bahaman Ornis than with the hope of adding new material where so much has already been done.

Mr. Riley commences with an account of previous publications on the birds of the Bahamas from the days of Catesby (1731–1748) to the present time—Bryant, Cory, and Maynard are well-known authorities on the subject. Mr. Ridgway has published a list of Bahaman Birds in the 'Auk' (1891), besides treating them in his 'Birds of North and Middle America.' Our member Mr. Bonhote has contributed some excellent remarks on them to this Journal (1899 and 1902), and Mr. Chapman's experiences with the Flamingos and other species in the Bahamas are known to all of us. But Mr. Riley tells us that some of the islands are still imperfectly explored, and that our knowledge of the Bahaman Avifauna is "far from complete." Of the 204 species and subspecies that have as yet been recorded, only 100 are "summer residents," the rest being accidental visitors or migrants. Taking the 44 "endemic" species (*i.e.* those not found elsewhere) one after the other, Mr. Riley endeavours to trace their nearest relatives. Leaving out the more or less doubtful cases, he shews that fourteen forms are apparently derivatives from North America and seventeen from the Greater Antilles, so that the Bahamas (which are oceanic islands "of comparatively recent origin") have been peopled with bird-life mainly from these two sources.

In conclusion, the author gives us a complete list of Bahaman birds and their exact localities, but does not specify exactly the species of which examples were secured during the expedition in which he took part.

133. *Stonham's 'Birds of the British Islands.'*

[The Birds of the British Islands. By Charles Stonham, C.M.Z.S., F.R.C.S., F.Z.S. With Illustrations by L. M. Medland. Vol. i. part i. London: Grant Richards, 1906. Price 7*s.* 6*d.* net.]

We are sorry not to be able to say much in praise of Mr. Stonham's "new work on an old subject," of which the first part is now before us, with an invitation to express our opinion on it. We cannot admire the illustrations, although we are told that "no trouble has been spared to ensure the greatest accuracy and beauty." Those of the Thrushes, which we should suppose would be easy subjects for an artist's pencil, are by no means pleasing to us.

Mr. Stonham wisely follows (very nearly) the nomenclature and arrangement of the List of the B. O. U., with which we are all familiar, and in the present number treats of thirteen well-known species, omitting those of rare or accidental occurrence. We quite approve of the plan of giving, as far as possible, the "correct derivation of the English and scientific names of the birds," but we cannot agree with the author's views on this subject in every case. For instance, "*rubus*," not "*rubeus*," is the Latin for a bramble.

134. *Townshend on the Birds of Massachusetts.*

[The Birds of Essex County, Massachusetts. By C. W. Townshend, M.D. (Memoirs of the Nuttall Ornithological Club, No. iii.) Cambridge, Mass., 1905. 1 vol., 4to. 352 pp.]

This is a well-written and clearly-printed essay on the birds of a district in the north-east corner of Massachusetts, which will be acceptable to American Ornithologists. After a preface, in which the topography and ornithological history of Essex County are described, the birds are taken according to the order of the American Check-list, and remarks on each of them are given. The total number of species and subspecies considered is 354, of which 319 are now extant. The lighthouses on the Essex coast have received special attention, and it seems to be shown that the birds which strike them nowadays are much less numerous than was formerly the case. The most remarkable record is that of September 3rd, 1899, on which night an enormous flock of Phalaropes dashed against the lights on Cape Ann, "so that the dead and dying covered the ground, and one man is stated to have picked up 800 of them."

The Ring-necked Pheasant (*Phasianus torquatus*), introduced in 1893, is now a "common permanent resident in Essex County."

XLII.—*Obituary.* Sir WALTER BULLER.

Sir WALTER LAWRY BULLER, K.C.M.G., well known to all ornithologists as the historian of the Birds of New Zealand, and our chief authority on that subject, died at Fleet, in Hampshire, on the 19th of July last.

Sir Walter was born in 1838, and was the son of the Rev. James Buller, of Canterbury, New Zealand, who was descended from an old Cornish family of that name. Taking the Law as his profession, he was Resident Magistrate and Native Commissioner from 1862 to 1872. During the Maori war of 1865 he served on Sir George Grey's staff as a volunteer, for which he received a medal and was mentioned in despatches. In 1874 Sir Walter was called to the English Bar, at the Inner Temple, and after that year was frequently resident in this country, being appointed a member of the New Zealand Commission for the Colonial Exhibition of 1886, and of the Executive Council for the

British Section of the Paris Exhibition of 1889. He also represented New Zealand on the governing body of the Imperial Institute, and served his native colony in other similar appointments.

Though devoted to every branch of natural history, and also a good ethnologist, Sir Walter's special pursuit was ornithology. He devoted himself from his earliest youth to the study of the native birds of New Zealand, and published his first essay on the subject at Dunedin in 1865. This led the way to the preparation of his well-known 'History of the Birds of New Zealand,' a quarto volume, admirably illustrated, which was published in London in 1873. The stock of this excellent work being quickly exhausted, the author set to work to prepare a second edition in two volumes, containing many additions and alterations, which was finished in 1888. Meanwhile, however, he had also written an octavo 'Manual' of the Birds of the Colony, suitable for settlers and field-naturalists, which was published at Wellington in 1882. Finally, Sir Walter, after seventeen more years had elapsed, resolved that it was expedient to summarize the additional information that had been obtained on the subject during that period in a Supplement, which we have fully described in the last number of this journal (see above, p. 582). This "Supplement" contains an account of all the birds known in New Zealand up to the present time, and is illustrated by five coloured plates drawn by Keulemans.

Besides these important works, Sir Walter published many papers in 'The Ibis,' the 'Proceedings of the Zoological Society of London,' and the 'Transactions of the New Zealand Institute.' In acknowledgment of his scientific work he was made a Doctor of Science in the University of Cambridge, a Corresponding Member of the Zoological Society, and a Member of the British Ornithologists' Union. He was elected a Fellow of the Royal Society in 1879, and in 1886 was made K.C.M.G. But, not quite content with his English honours, Sir Walter had an innocent pleasure in obtaining distinctions from foreign countries. He became a Knight Commander of the Crown of Italy, a Knight of the Order of Francis-Joseph of Austria, of Frederick of Würtemberg, and of Philip of Hesse-Darmstadt, and an Officer of the Legion of Honour in France. Three species of birds which bear his name as their specific title—*Larus bulleri* of Hutton, *Diomedea bulleri* of Rothschild, and *Puffinus bulleri* of Salvin—will recall his fame to the memory of the future ornithologists of New Zealand.

List of Sir Walter Buller's principal Ornithological Works.

Essay on the Ornithology of New Zealand. 8vo. Dunedin, 1865.

A History of the Birds of New Zealand. 4to. London, 1873.

——. 2nd edition. 2 vols. 4to. London, 1887–88.

Manual of the Birds of New Zealand. 8vo. Wellington, 1882.

A Classified List of Mr. S. William Silver's Collection of New Zealand Birds (at the Manor House, Letcombe Regis). 8vo. London, 1888.

Illustrations of Darwinism, or the Avifauna of New Zealand considered in relation to the Fundamental Law of Descent with Modification. 8vo. Wellington, 1895.

Supplement to the Birds of New Zealand. 2 vols. 4to. London, 1905–06.

XLIII.—*Letters, Notes and Extracts.*

The following letters addressed "To the Editors of 'The Ibis'" have been received:—

Sirs,—A Ruff and Reeve (*Machetes pugnax*) visited the marshes within a few miles of Redcar in the summer of 1901, and, judging from subsequent experience of their movements, succeeded in nesting and taking their young brood off in safety.

In the following year a diligent watch was kept for the re-appearance of the visitors, and on the 10th of May the arrival of the Ruff and *two* Reeves was announced. In company with two friends I repeatedly saw the birds and their first nests. The eggs were destroyed by accident about the end of May, but both females nested again, hatched their eggs, and got the young away.

In 1903 the Ruff and one Reeve appeared in May, but contrived to baffle all our efforts to locate the nest. Since that year, although a strict look-out has been kept, no sign of the birds has been seen, and it is to be feared that an accident has occurred to one or both of them during the shooting-season.

I am, Sirs, yours &c.,
T. H. Nelson.

The Cliffe, Redcar,
June 1906.

Sirs,—By a slip of the pen (or by a typographical error) it was stated in my paper on the birds of Transcaucasia (above, p. 424) that *Carduelis volgensis* is met with "from Ssuram to the Ural." The former word should be "Ssura" —a river in the Ssimbirsk Government—a right-hand tributary of the Volga (not Ssuram in the Caucasus).

On p. 409 for "unwini *Hume*" should be read "*not* unwini *Hume*."

I am sorry to be obliged to add that I made a mistake in proposing a new name (*Garrulus nigrifrons*) (above, p. 426) for "*Garrulus anatoliæ*" of Derjugin and Bianchi (not of Seebohm). The above-named writers, as well as myself, were induced to treat the Chorokh Jay as a form apart by insufficient or—as is often the case in museums—by not properly labelled material. After my paper was in print, I had occasion to examine the rich and carefully labelled collection of Mr. Sarudny, of Pskov, and to make direct comparison of selected specimens with types of the *G. anatoliæ* of Derjugin and Bianchi in St. Petersburg. And I am now quite satisfied that in *G. atricapillus* and *G. krynickii* sexual and age differences are much more marked than in *G. glandarius*—females and young of the former species having the head darker, and the white or whitish on the forehead much reduced, as compared with adult males; so that the Chorokh or Armenian Jays brought home by Mr. Derjugin are only young birds and females of *G. krynickii* Kal. (=*G. anatoliæ* Seeb.).

I may add in reference to *Carduelis brevirostris* of Sarudny (above, p. 423), that on comparison of a large series (not single skins) one can see that it is a trifle paler and greyer than *C. loudoni*, and a trifle less chestnut and more earthy greyish brown than *C. carduelis*.

In the April number of 'The Ibis' (above, p. 397) I find a note about a Wild Swan nesting in Seistan, which has been recorded as *Cygnus musicus* (Journ. Bomb. N. H. Soc. vol. xvi. p. 697, 1905). It is very justly remarked as strange that a Whooper should breed so far south. In connection with this note it will be of interest, perhaps, to your readers to know that Mr. N. A. Sarudny, in his last work on the birds of Eastern Persia (Mém. Soc. Imp. Russ. Géogr. vol. xxxvi. n. 2, 1903, p. 100), in the Russian language, says that it is the Mute Swan (*Cygnus olor*) that nests in Seistan. As to the Whooper, it has been stated by Mr. Sarudny (in one of his previous works) to be only a winter-visitor there, and evidently a rare one.

Yours &c.,
S. A. Buturlin.

Wesenburg, Esthonia, Russia,
22nd June, 1906.

Sirs,—Referring to my letter of the 19th April (above, p. 611) respecting the wholesale taking of eggs of the Great Skua in Iceland, I have since heard from my friends Dr. Finsch and Mr. Herluf Winge that Mr. A Bachmann, who wrote the article to which I referred, is not a collector, but an artist and photographer, and that he visited Iceland for the purpose of photographing and not of collecting eggs. I therefore take this opportunity of apologizing to Mr. Bachmann for the mistake made in supposing him to be an egg-collector, and to have been concerned in the harrying of the colony of Great Skuas. It appears that the peasant, Oddur Brunjolsson, who took the 240 Skuas' eggs (all of which were obtained in one day), and who was photographed along with his plunder, collected them for a well-known Icelandic naturalist-dealer, Mr. Nielsen, with whom Mr. Bachmann was staying. Mr. Winge informs me that in

Iceland the Great Skua is not protected, being considered to be a destructive and noxious bird, and that its eggs are collected and eaten by the peasants in large quantities. Mr. Bachmann's article on the birds of Iceland is most interesting, but I wish that he had stated that he was not an egg-collector, and disapproved of the wholesale plunder of eggs, as I should then most certainly not have fallen into the error of supposing him to have been in any way connected with a dealer.

I am, Sirs, yours &c.,
H. E. Dresser.

28 Queensborough Terrace, London, W.,
15th August, 1906.

The Alexander Trans-African Expedition.—Since our last notice of the progress of this Expedition (see above, p. 615) a letter has been received from Capt. Boyd Alexander, dated "Bomakandi" (on the Wellé), 20th April, 1906. He writes:—"We are going on well, but have no startling news. One day for us is much like another—an early start, a bad river to struggle against, and two halts at different spots for collecting. This is the last place where we are in touch with the great Congo Forest, and the river now flows through a very open country. We leave to-day for Dongu, which we hope to reach in about a month's time. The boats are beginning to suffer a bit. The continual shocks against the rocks are making small splits in the steel ribs along the bottom, which, however, have been effectually stopped by a kind of wax-resin obtained from the natives.

"Bomakandi is a fine station, and we have been hospitably received by the Belgian officers. When we have reached Dongu (which will be found marked in the 'Times Atlas,' no. 206) we shall have passed up the whole length of this rather terrifying river. It is very picturesque in places, being studded with rocky islands covered with forest-growth."

Another letter, dated "Niangara, on the Wellé, June 16th," contains the sad news of the death of Capt. Gosling at that place, on July 13th, leaving Capt. Alexander the sole surviving member of the expedition. Capt. Gosling died of blackwater fever, of which he had had a previous attack. Capt. Alexander was himself in good health, and was leaving the next day for Dongu, whence he intended to try to go up the Kibali and find a way across to the Nile by that route. If he succeeds in this he will probably come out at Wadelai.

At the last meeting of the British Ornithologists' Club (see Bull. B. O. C. xvi. p. 124) three new species of birds (*Thamnolœa claudi*, *Fringillaria goslingi*, and *Pytelia lopezi*) were described from the collections of this expedition which had already reached London.

The Ruwenzori Expedition.—It is very satisfactory to learn that Mr. Woosnam's expedition (see above, p. 613) continues to make good progress. Mr. Carruthers, writing from the new camp at the south end of the Range on June 15th last, says:—

"At the present time we have got just two thousand bird-skins, and hope to be able to add another thousand to the collection during the next four months. We are now encamped at the S.E. end of the range, but in a few weeks we shall move to the N.E., where we expect to work for the remainder of our time."

Mr. Carruthers's last letter is dated April 20th, 1906, from the camp at the south end of Ruwenzori. He writes:—

"About a week ago we left our camp in the Mabuka Valley, and travelled south along the base of the mountain, getting into a great low-lying plain. After four days' march we found ourselves in an uninhabited and almost waterless country, so we had to return to a village, where there is a stream of good water and many banana-groves. Here we pitched our camp on a little hill overlooking the most magnificent view.

"The whole country and vegetation change at the south end of Ruwenzori; there is no elephant-grass nor great forests. The mountains drop away very suddenly into small hills covered with short grass. The plain is like a huge park, and we can walk anywhere on the flat. We can see over an enormous area, miles of grass dotted with trees. A large lake is close to us—an extension of Lake Albert Edward,—and we live on fish caught by the natives in this lake. Behind us are the mountains, which look like downs. We expect to stay here about two months, and then to move our camp right round into the Congo Territory."

Mr. Neave's Expedition to N.E. Rhodesia.—Mr. S. A. Neave, M.A., B.Sc. Oxon., late Naturalist attached to the Geodetic Survey in North-eastern Rhodesia, reached Fort Jameson (*viâ* the Zambezi and Tete) in March 1904, and travelled thence to Feira, near which place the members of the Survey had their headquarters. The next four months were spent in the districts on both sides of the Zambezi and Loangwa Rivers. The rainy season of 1904–5 was passed at Petauke, the Chartered Company's westernmost station in the East Loangwa District. In April 1905 Mr. Neave left Petauke in a south-easterly direction, and proceeded nearly to the Portuguese border. Thence he turned west, and, crossing the Loangwa, joined the members of the Survey at work there. Retracing his steps, he spent some time on the Loangwa, where he met with an abundant and varied fauna. Mr. Neave returned to Petauke at the beginning of August 1905 to refit, and, after a short trip northwards, started in December last on a journey westwards, *viâ* Imkushi and Chervalla's, to Ndola and the Kafué River. He left the Kafué at the end of October last, and passing close to the Irumi Mountains, through some very fine country, finally reached the Loangwa River and Petauke about the beginning of December. After a short stay there he left in the middle of January and returned home by Fort Jameson and Nyasaland.

The collection made by Mr. Neave contains about 750 specimens of Birds, besides Mammals, Fishes, Reptiles, and other objects, which he is now studying for determination.

So far as the collections have yet been worked out, the country proves to be exceedingly interesting to students of geographical distribution.

Olfactory Organs of the Kiwi.—At the meeting of the Zoological Society of London on May 29th last, Mr. R. H. Burne, F.Z.S., exhibited, on behalf of Prof. Stewart, some dissections prepared for the Museum of the Royal College of Surgeons from material derived from the Society's Gardens. The specimens included the head of a Kiwi (*Apteryx mantelli*) in sagittal section, shewing the relatively large size of the olfactory parts of the brain and the complexity of the olfactory chamber in that bird.

The Californian Earthquake.—From a letter addressed to Dr. Finsch by Mr. Walter K. Fisher, of Stanford University (the Editor of 'The Condor'), we learn that the full force of the shock was felt at that University, the great fault which resulted from the disturbance being only seven miles off. Fortunately most of the buildings wrecked were newly erected and unoccupied, and the large Zoological Museum escaped with only broken plaster from the ceiling, but the collection in spirit suffered severely. The University, however, had arranged to begin work again in August. Mr. Fisher adds:—"I may say that the greatest loss to science from the earthquake was the total destruction of the fine building of the California Academy of Sciences, including a magnificent collection of birds, plants, insects, and reptiles, together with the scientific library. This library was the only one worthy of the name that we had on the Pacific coast. I believe only about fifty of the rarest books were saved, including, however, a copy of the first series of 'The Ibis.'"

Is the Kea carnivorous?—We had supposed that after all that Sir Walter Buller and other good authorities on the birds of New Zealand had written on the carnivorous habits of the Kea (*Nestor notabilis*) there could be no longer any doubt upon this subject, more especially as the living bird received by the Zoological Society in 1881 was provided with a mutton-chop every day, and eat it in the face of all London. But in 'Nature' of Dec. 28th, 1905, we were told that at a recent meeting of the "Wellington Philosophical Society" it had been decided that the alleged sheep-killing and flesh-eating habits of the Kea were "without a shadow of foundation," and that "although the legend cannot be said to be completely disproved, yet there is not a scrap of evidence in its favour"!

This categorical denial of what had been long considered an established fact fortunately attracted the attention of Dr. W. B. Benham, now at Dunedin, whose views on the question will be found in 'Nature' of April 12th, 1906. Dr. Benham, after making diligent enquiries, came to the conclusion that there could be no doubt that the Keas "have wrought and are still causing great havoc among the sheep in certain districts." He quotes the following amongst other evidence on the subject.

Mr. Fraser, a Stock-Inspector in Nelson province, writes:—

"I was engaged sheep-farming in the Hawea and Wanaka-lake districts in 1871–1883. I lost thousands of sheep from Keas. I have seen the Kea attacking the sheep, and also eating into a sheep when the latter was stuck in deep snow. I have opened scores of Keas-crops, and found wool and meat therein. I have laid poison in dead sheep in the snow, and gone back later and found dead Keas."

After this we think there need be no more question of the carnivorous habits of *Nestor notabilis*.

Mr. W. L. Sclater.—Mr. W. L. Sclater, who has resigned the Directorship of the South-African Museum, Cape Town, has accepted the post of Director of the Colorado College Museum, Colorado, U.S.A. Mr. J. A. S. Bucknill (of Pretoria) has been elected President of the South-African Ornithologists' Union, to succeed Mr. W. L. Sclater.

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2. Beebe. The Ostriches and their Allies. (9th Ann. Rep. N.Y. Zool. Soc.)
3. Boraston. Nature-tones and Undertones. (Royal 8vo. London & Manchester, 1905.)
4. Christensen. Dvergmaagen (*Larus minutus*) som Ynglefugl paa Klægbanken i Ringkjobing Fjord. (Vid. Med. f. d. nat. Foren. Kjbn., 1905.)
5. 'The Condor.' (Vol. vii. no. 6.)
6. Dubois. Remarques sur l'Ornithologie de l'Etat Indépendant du Congo. (Ann. Mus. Congo, i. fasc. 1.)
7. 'The Geelong Naturalist.' (Second Series, vol. ii. no. 1.)
8. Guenther. Der Wanderflug der Vögel. (Verh. Deutsch. zool. Ges., 1905.)
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11. Kleinschmidt. Falco, unregelmässig im Anschluss an das Werk "Berajah, Zoographia infinita" erscheinende Zeitschrift. Jahrg. 1905, no. 1. (8vo. Halle-a.-S., 1905.)
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13. Lodge. The Birds and their Story. (8vo. London, 1905.)
14. Marshall. A Study of the Anatomy of *Phalænoptilus* Ridgway. (Proc. Amer. Phil. Soc. xliv.)
15. Miller. List of Birds collected in Southern Sinaloa, Mexico, by J. H. Batty during 1903–1904. (Bull. Amer. Mus. N. H. xxi.)
16. 'Novitates Zoologicæ.' (Vol. xii. no. 2.)
17. Ogawa. Notes on Mr. Alan Owston's Collection of Birds from the Islands lying between Kiushu and Formosa. (Annot. Zool. Japon. v. pt. 4.)
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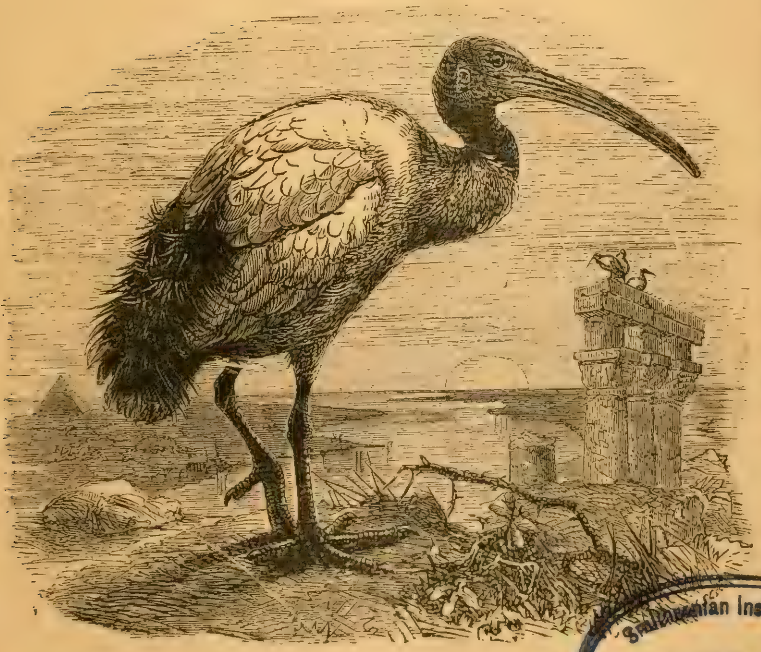

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